PERSONALITY TYPE AND LEISURE SATISFACTION AS FACTORS IN COLLEGE ATTRITION

BY

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Abstract of Dissertation Presented to the
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PERSONALITY TYPE AND LEISURE SATISFACTION AS FACTORS IN COLLEGE ATTRITION

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A longitudinal, descriptive study was undertaken at a private four-year liberal arts college to determine if personality type, leisure satisfaction, and grade point average (GPA) were factors in student attrition. The Myers-Briggs Type Indicator (MBTI) and the Leisure Satisfaction Scale (LSS, Ragheb and Beard) were used to measure personality and leisure satisfaction respectively. Sex, residence status, and Greek affiliation were additional factors studied. Personality type and Greek affiliation related significantly to student withdrawal or persistence in college. Personality type and leisure satisfaction subscales were also significantly related.

On the basis of findings, the student who voluntarily withdraws in a college environment similar to that of the study would more likely be Introverted and Perceptive (as measured by the MBTI), not Greek affiliated, and have a lower GPA. The persister would more likely be Judging (as measured by the MBTI), Greek, and have a higher GPA.

Relaxational Leisure Satisfaction scores were highest of the LSS subscales and reflect the need for college students to reduce stress through leisure. The Social Satisfaction Subscale ranked second highest for all factored groups, reflecting needs for affiliation and peer interaction. No statistical relationship was found between leisure satisfaction and grades, although GPA was strongly associated with one scale of the MBTI.

MBTI types found more likely to withdraw need to be studied more closely in relation to their adjustment to the college environment, development of leisure, decision-making ability, and grade point averages. If the pattern of MBTI types and attrition is replicated in subsequent studies, admissions counselors' recruitment practice and counselors' practice will need to be modified. The college may be stimulated to ask "Is this the type of student we wish to attract and keep? Do we want to consider changing the institution and its environment in ways that will encourage withdrawing students to stay?" Colleges should support residential, social organizations as factors influencing student persistence.

CHAPTER I

INTRODUCTION

Approximately 60% of entering freshmen in American universities and colleges drop out before completing baccalaureate degree programs. Colleges, especially smaller private colleges, anticipating a decreasing applicant pool of "traditional" students (i.e., fulltime, 18 to 22 year olds) and concurrently experiencing rapidly rising operating costs, view this attrition rate with increasing consternation.

In addition to economic concerns, there are also student adjustment issues related to attrition such as the potential for failure, frustration, and threat to physical and/or emotional health. Although some individuals drop out and experience little, if any, negative consequences, most students going through the college withdrawal process experience some degree of stress. When students' personal expectations for academic success are incongruent with academic performances (i.e., dropping out behavior), conflicts with parents, personal disillusionments, and students' losses of self-confidence may result.

Stress may be manifested through physical illness such as mononucleosis and ulcers and/or through psychological conditions such as depression and alcohol/drug abuse. Students may define dropping out not only as failure to achieve but also as social and interpersonal failure. The dropout may feel unable to handle independence from family, development of new friendships with peers, or other "ordinary" life adjustments.

Attempts have been made to identify factors influencing dropping out, or attrition, during college years. These attempts have intensified during the decade of the 1970's primarily because of the decreased traditional student applicant pool in the 1980's (Garni, 1980) and the economics of inflation.

Most studies of this nature have attempted to correlate intellective measures (i.e., of intellectual or academic ability such as SAT scores, high school grade point averages, etc.) and background characteristics (e.g., socio-economic factors, parents' expectations, geographical region) with persistence in college. In reviewing these types of attrition studies, Bean and Covert (1973), Marks (1967), and Pantages and Creedon (1978) found little or no significant correlations between those factors and dropping out behaviors. Further, motivation, per se, has not been established as a significant factor (Lueptow, 1973). Astin (1964) pointed out that the "best linear combination" of correlated factors can only account for 20% of the variance among reasons for dropping out, and the correction for shrinkage could reduce this percentage by as much as 10%.

Some attempts have been made to identify non-intellective factors in attrition. For example, several recent models for attrition research urge local studies that take into account "fit" or "mismatch" of a particular college's environment with specific student characteristics (Astin, 1964; Tinto, 1975).

Tinto focuses on the process of interaction between the student and the institution of higher education. He borrows from Durkheim's theory of suicide and alienation to propose this analogy: societal alienation is to suicide as lack of integration into college is to attrition. Tinto assumes that lack of integration into the social system of the college will lead to a lower commitment to that social system and will therefore increase that individual's likelihood of leaving college.

Terenzini and Pascarella (1978), in discussing Tinto's model, referred to the "socio-psychological interactions between the student and the institutional environment."

Integration into both the academic and social systems of the college is crucial and assumes the concept of "fit." Astin also explored the concept of "fit" in his studies during the 1960's (Astin, 1964).

However, in reviewing several attrition studies that have attempted to include some of these non-intellective factors, Terenzini and Pascarella (1978) found the maximum explained variance among dropouts to be only 30%. A table of these factors can be found in Chapter II, p. 18. Thus, although Tinto and others stress the need for holistic approaches (which include social integration as well as intellective factors), much of the attrition process is still unexplained.

The Problem

Little is known about the impact on college attrition of such non-intellective factors as student personality and leisure. In attempting to learn more about the attrition process and explain a larger percentage of the variance among dropouts and persisters, personality and leisure factors should be explored. Personality and leisure factors are particularly important to investigate if one assumes the theoretical perspective of Tinto and Astin.

In particular, these student factors should be examined for their impact on attrition during the first two years of college. If students "survive" the first two years of college, their chances of graduating increase to 65% or better (Marsh, 1966). The freshman year is a particularly crucial one for adjusting academically and socially to the new environment in college. Students may be away from home for the first time and must learn to make decisions for themselves regarding career directions, use of time, study habits, money budgeting, moral issues, and so forth. Living away from home and with a new peer group intensifies social interactions and students' needs to be accepted and belong. The new student must learn to "fit" into a new environment. This transition period involves not only social and intrapersonal issues but also adjustments to academic work loads, and perhaps to new learning approaches. Students unable to adjust academically and socially are likely to drop out during the first year or early in the second year.

The Need

Identifying additional variables related to college attrition will build upon student development theory and knowledge of college attrition and persistence. In terms of counselor and student personnel practice, additional knowledge about attrition factors would suggest certain interventions for high risk students (i.e., prone to dropping out). For example, if this study finds that certain personality types have difficulty finding leisure satisfaction and subsequently leave, counselors could target this particular group for preventive leisure counseling. This same knowledge could be applied to individual counseling for a comprehensive, holistic approach that considers the student's presenting problem along with personality type and leisure/work relationships. College environments might be modified in some ways to better meet the needs and interests of certain student personality types, as in the areas of housing and leisure activities.

With new knowledge about attrition factors, student personnel professionals also can be better trained in preventive interventions, programming, and methods of shaping the college environment to facilitate student adjustment. As more is learned about the significance of leisure to student adjustment, counselors can be better trained to assess and deal with this dimension.

This study may also point to directions for further attrition research on local and national levels. Findings of a descriptive, correlational nature could suggest possible "treatments" to prevent dropping out. These treatments could then be tested through further research.

Purpose of the Study

The purpose of this study is to investigate personality and leisure factors among college students using a descriptive and correlational research approach, to determine if these factors are related to attrition in college. Specifically, this study will explore students' persistence in college as related to their personality type as measured by the Myers-Briggs Type Indicator, leisure satisfaction as measured by the Leisure Satisfaction Scale, and grade point average.

Rationale

Based on the research and theoretical positions of Astin, Tinto and others who have utilized Tinto's model (e.g., Pantages and Creedon, 1978; Sagaria et al., 1980; Terenzini and Pascarella, 1978), it is appropriate to gather information describing particular student characteristics and to examine how these characteristics vary within and between groups of students who are dropouts and persisters. Among these factors, personality figures heavily. Tinto states that "perceptions of reality have a real effect. . . . persons of varying characteristics may hold differing perceptions of apparently similar situations" (p. 98). Another process-oriented attrition researcher, Marks, describes college withdrawal as a "decisional process", utilizing "judgmental skills and preferred modes of dealing with informational input, broadly termed personality variables" (1967, p. 211).

The study will describe a specific population of students, following them from pre-college orientation week to mid-sophomore year, with data collection at several points. Terenzini (1978) recommends this type of study, the longitudinal design, for its control of pre-college differences. The cross-sectional and autopsy designs, to be discussed in Chapter II (Literature Review), do not offer this control and have other drawbacks as well. Since students dropping out during the first two years of college yield the largest percentage of the attrition rate, this study focuses on that time period.

Several theory bases are used in this study. These bases will be explored in more detail in Chapter II, but merit brief mention here.

Developmental psychology proposes certain life stages, needs, and tasks. The college years comprise one of the most crucial developmental stages. Chickering (1969) has researched and written thoroughly on the role of the college environment in facilitating this developmental process. His work encompasses both the academic aspects of college and the social and intrapersonal (development from within the individual) aspects.

A growing body of knowledge about leisure can be applied to issues of student lifestyle. Leisure can be defined a variety of ways. Perhaps the simplest definition is activities that are chosen freely, at the individual's personal discretion after work and other obligations are completed (Bull, 1972; Dumazedier, 1967). An individual should ideally incorporate both work and leisure into his/her lifestyle to achieve a balance and sense of well-being. Successful adjustment to college may be seen as a balance between academic work and social integration leisure/play.

To summarize the relationship of these concepts to college attrition, one can view the presence of, or lack of, academic and social integration into the college as a framework. Within this framework, personality characteristics are relevant to concepts of "fit" with the environment, to decisional processes related to withdrawal, and to developmental needs. Also within this framework, use of leisure may influence academic, and especially social, integration. Some type of balanced student lifestyle that incorporates both academic work and leisure increases the likelihood of integration.

Scope of the Study

Data will be gathered through a longitudinal study of the Rollins College class of 1984, following them from freshman orientation through mid-sophomore year. Personality type, leisure satisfaction, enrollment status, and grade point average will be investigated through a series of null hypotheses.

Definition of Terms

Personality type will be defined as scores on the Myers-Briggs Type Indicator (MBTI) Form F (1976). This Indicator is a self-report questionnaire of 166 forced choice items and is based on Carl Jung's theory of psychological type. Results (type) reflect the manner in which individuals perceive the world (process information) and judge or evaluate those perceptions.

Leisure satisfaction is simply the extent to which different kinds of needs are satisfied through one's leisure activities (Ragheb and Beard, 1980). On the Leisure

Satisfaction Scale (1978) they further define leisure activities as "non-work activities in which the individual has a free choice as to whether or not to participate". Leisure satisfaction will be measured by the Leisure Satisfaction Scale (LSS) Short Form (1978), developed by Ragheb and Beard.

The attrition variable will encompass several categories of enrollment: voluntary withdrawals (i.e., who choose to leave college) and persisters. Persisters may a) plan to complete their undergraduate work at Rollins College or b) plan to leave before graduating. Academic dismissals will not be included in the study since the issue with this type of dropout, as shown in the literature, is usually academic ability. This study seeks to focus not on intellective or academic issues but rather on non-intellective factors. A literature review indicates variation in attrition patterns and leisure interests of male and female college students; therefore these variables will be controlled for sex. Resident status--whether living on campus or off campus--will also be controlled.

Research Hypotheses

1. There are no differences in leisure satisfaction between those students planning to persist until graduation and those students planning to leave prior to graduation.

2. There are no differences in leisure satisfaction between male and female students either in the total sample or when grouped by enrollment status.

3. There are no differences in leisure satisfaction between students living on campus and students living off campus either in the total sample or when grouped by enrollment status.

4. There are no differences in leisure satisfaction among the 16 MBTI (personality) types either in the total sample or when grouped by sex.

5. There are no differences among the 16 MBTI (personality) types in enrollment status either in the total sample or when grouped by sex.

6. There are no differences among the 16 MBTI (personality) types in grade point average either in the total sample or when grouped by sex.

Overview of Remaining Chapters

In Chapter II, previous attrition studies will be reviewed and the case established for selecting the particular variables used in this study. Instrumentation and general discussion of research design will also be included in Chapter II. Chapter III will present the methodological approach: sampling, procedures, and statistical methods. Chapter IV will present the data, analyses and results, and Chapter V a discussion of findings, implications, and conclusions.

CHAPTER II

REVIEW OF THE LITERATURE

The review of the literature begins with a discussion of major developmental and leisure constructs before preceding to attrition research and instrumentation.

Developmental Needs

Implicit in Tinto's model of integration are issues of student developmental needs. The drive for academic integration reflects needs for achieving competency, establishing an identity, and clarifying purposes. Inherent in social integration are needs for managing emotions, becoming autonomous, freeing intrapersonal relationships, and developing integrity (for academic integration as well). These needs are the "seven developmental vectors" for the young adult identified by Chickering (1969) in his research on student development and interaction with college environments.

Chickering's research examined the capacity of various colleges to facilitate development of these vectors through curriculum, teaching methods, residence halls, and student culture. He concluded that certain college environmental conditions are necessary for student development; for example, institutional size and residence hall arrangements influence the frequency and intensity of interaction (p. 278). Individual differences in social and intellectual needs also must be taken into account by institutions. Colleges should be flexible in curriculum programming and encourage a variety of subcultures and college lifestyle options. Where sensitivity to student differences and institutional flexibility do not exist, Chickering suggests that a high attrition rate will be present.

Other developmental theorists (e.g., Erikson, 1968; Havighurst, 1980) identify certain developmental, psychosocial tasks of adolescents and young adults. In general terms, these tasks involve defining identity as a sexual being and as a productive member of society, and moving towards intimacy, away from isolation. Student uses of discretionary time, as well as classroom experiences, have bearing on the resolution of these developmental tasks. Students experience problems when development is blocked by unsuccessful or imcompleted tasks and needs. Dropping out may result. Murphy's (1975) research points to the different use of leisure time by college students than by other groups. Because of their developmental needs, student activities are "collectively" or socially oriented, not "achievement" oriented, since academics are generally the focus of achievement.

Balance in Work/Leisure

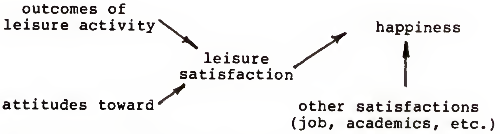
Another perspective on Tinto's model of social and academic integration and student developmental needs results when student life is viewed in terms of balance between work and leisure or play. Work can be defined as classroom activity, studying, and employment. Leisure can be viewed as activities chosen freely at the student's personal discretion ("discretionary leisure") after work and any other obligations have been completed (Bull, 1972; Dumazedier, 1967). Some leisure researchers propose the broader definition that leisure is a "state of mind" (Besag, 1975; Murphy, 1975; Neulinger, 1974). Preferring the term "play", Ellis (1973) lists play characteristics as voluntary, free, non-productive, non-utilitarian, and non-work.

Chickering presented a comprehensive view of student life from his developmental perspective and stressed the importance of balance in academic and non-academic activity. Havighurst discussed balance in terms of "life-style", which encompasses three dimensions: play, study, and work. The percentage of time spent in each of these dimensions will vary with the individual and the developmental stage, but all three should be present for personal development. The literature on stress also points to balance between work and leisure as crucial to physical and emotional well-being and functioning (McDowell, 1979; McQuade and Aikman, 1974; Rohrlich, 1980; Sparks, 1981; Walker, 1975).

Leisure satisfaction is one dimension of leisure defined by Beard and Ragheb (1980) as follows:

> The positive perceptions or feelings which an individual forms, elicits or gains as a result of engaging in leisure activities and choices. It is the degree to which one is presently content or pleased with his/her general leisure experiences and situations. This positive feeling of contentment results from the satisfaction of felt or unfelt needs of the individual. (p. 330)

Satisfaction is differentiated from other leisure dimensions by these authors. Leisure attitudes are perceptions, interests, and values related to leisure and leisure activities. Attitude contributes to satisfaction. "Happiness with leisure" is composed of a number of satisfactions (p. 331). Ragheb and Beard see satisfaction as the "affective component of attitude" and the "total outcome of direct experience" (p. 331). Thus certain uses of leisure may fill specific needs of the individual leading to leisure satisfaction. The following diagram summarizes the relationships of these leisure dimensions:


outcomes of leisure activity
happiness
leisure satisfaction
attitudes toward
other satisfactions (job, academics, etc.)

The point can then be argued that a student experiencing "happiness" in the college environment has a variety of needs met ("satisfactions") and is not likely to drop out.

Overview of Attrition Research

There are several thorough reviews of attrition research in the literature (e.g., Marsh, 1966; Pantages and Creedon, 1978; Sexton, 1965; Terenzini, 1978; Terenzini and Pascarella, 1978; Tinto, 1975). Salient points made by these authors are presented here to give an overview of attrition research. A table on the following page summarizes studies of attrition factors. Following this discussion, specific studies will be reviewed which address personality and leisure dimensions.

TABLE 1
SUMMARY OF STUDIES OF ATTRITION FACTORS

FACTOR	RELATED TO ATTRITION	NOT SIGNIFICANT OR UNCLEAR
1. Intellective		
a) high school grades	-low grades (Astin, 1975; Pantages and Creedon, 1978)	
b) SAT	-low SAT (Marsh, 1966; Ramist, 1981)	b) varies by sex and type of dropout (Bean and Covert, 1973; Faunce, 1973)
2. Demographic		
a) sex	-females/voluntary withdrawals (Pantages and Creedon, 1978; Tinto, 1975) -females in institutions with more men than women (Astin, 1977) -males in non-selective, large universities (Astin, 1975)	
b) parental income	-lower income (Astin, 1975)	
c) parental education	-less education (Astin, 1975)	c) (Pantages and Creedon, 1978)
d) hometown size	-small town (Astin, 1975; Cope, 1972)	
e) high school size	-small size (Cope, 1972)	e) (Panos and Astin, 1968)
3. Motivational Factors		
a) need for achievement		(Lueptow, 1973)

TABLE 1 - continued

b) degree goal	-higher the degree goal, lower the attrition (Astin, 1975; Marks, 1967)	
c) vocational goal	-goal decreases attrition (Sexton, 1965)	e)(Panos and Astin, 1968)
d) expectation for success in college	-positive expectations/decreased attrition (Marks, 1967; Pantages and Creedon, 1978)	
4. Personality	-assertiveness, nonconformity for high ability students only (Heilbrun, 1965)	-for men (Bean, 1973), (Bourg, 1979)
	-restlessness, impulsiveness, independence (Alfert and Suczek, 1961; Hannah, 1971) for women only (Bean and Covert, 1973; Faunce, 1973; Vaughn, 1968)	
	-aloofness, assertiveness, impulsiveness (Astin, 1964)	
	-higher intuition/lower attrition and higher Feeling, higher attrition for men (Stricker and Ross, 1965)	
5. Extracurricular Activities/Leisure	-low peer contact for women (Terenzini, 1978)	(Pantages and Creedon, 1978)
	-greater participation/decreased attrition (Sexton, 1965; Tinto, 1975)	
6. "Fit" of College and Student	-congruence/lower attrition (Astin, 1975; Cope, 1975; Pantages and Creedon, 1978)	

Marsh saw three major approaches to studying attrition during the period from the mid 1950's to mid 1960's: theoretical, descriptive, or predictive. Descriptive studies of this period found large variation in dropout rates among institutions. He challenged the validity of data gathered from students at the time of their withdrawal, since there might be greater emotionality and subjectivity at that time. Marsh cited Vorreyer's work in 1963 as the most promising predictive study of this period. Using a battery of tests, including the Ohio State University Psychological Test and scales from the Bell Adjustment Inventory, and grade point average, Vorreyer derived a complex discriminant equation to predict dropouts with about 80% accuracy. Marsh, however, pointed to the general weakness of personality inventories as predictors of attrition. He speculated that this weakness is due to the frequent clinical orientation of these instruments. Similarly, Pantages and Creedon judged the researchers as "fairly unsuccessful" in identifying personality and attrition relationships and in replicating these studies.

Tinto pointed to the importance of not grouping all dropouts together, but rather separating them into two distinct groups: voluntary withdrawals and academic failures. There may be other relevant groupings as well, such as temporary versus permanent dropout. He proposed that the failure of many attrition studies to find significant relationships is due to the grouping together of all types of dropouts, with resultant masking of some specific differences and relationships. Bean and Covert (1973) made a similar point, "measures of scholastic aptitude appear to predict only that portion of the college student attrition associated with low college grades" (p. 407).

Terenzini (1978) compared three basic designs for attrition research according to their strengths, weaknesses, costs and benefits. The "autopsy" design, or "retrospective", involves an after-the-fact survey of reasons for dropping out. Advantages of this design are its simplicity, modest costs, and ability to separate those students dropping out for some stated problem from those who have accomplished their educational goals. Disadvantages far outweigh advantages, however. There is likely to be little, if any, instrument (questionnaire) reliability and validity. Bean and Creswell (1980) also identified autopsy studies as "fraught with validity problems" (p. 320). Also, students may rationalize their dropping out. Response rates tend to be low, often less than 30 or 40%. Finally, there is usually no control group from which to draw comparisons.

The cross-sectional design calls for collecting data at one time from various groups of students currently enrolled. In the subsequent academic years, various categories of dropouts/non-dropouts can be compared with the previously collected data. Advantages are a higher response rate and provision of comparison groups. Control of pre-matriculation differences (such as intelligence and personality) is necessary to avoid confounding with possible environmental factors or college experiences. If these pre-matriculation differences can be controlled, multi-variate statistical procedures should be utilized and are superior to the bivariate methods commonly used in autopsy designs (Terenzini, 1978).

The third and "tightest" design is the longitudinal study. Data are collected from the same students at two or more points in time. Initial data are usually gathered prior to matriculation. The major advantage is the control of pre-college differences. However, a problem with all longitudinal studies is the "mortality" rate of subjects who do not respond to subsequent data collections. Anticipating this problem, the largest possible original sample should be obtained. Costs are higher for this type of research, and data processing is obviously more complex.

The point has already been made that findings may vary from institution to institution, hence the need for "local" studies of high calibre. Valiga (1980), in comparing five institutions according to students' stated reasons for leaving college, found that major reasons differed from institution to institution. Astin (1977) similarly stressed that the specific characteristics of a college environment should be taken into account in attrition research. Sexton (1965) asserted there is no "universal model" of attrition factors.

Researchers should be clear in their definitions of dropout. All dropouts should not be grouped together. A minimum distinction should be made between voluntary withdrawal and academic dismissal. Bean and Covert (1980) suggest several other categories in addition to actual attrition. In a recent study, they surveyed students thus:

1. Do you expect to return to this college next fall?
2. Do you expect to be enrolled at this college one year from today?
3. Do you expect to graduate from this college?

Bean and Creswell (1980), Cope (1970) and Terenzini (1978) caution that researchers should control for sex differences. Men and women often withdraw from college for different resons and may interact differently with the college environment. Cope found that personality factors related to attrition may vary by sex. Furthermore, Terenzini concluded that positive perception of peer contacts is more of an influence on attrition behaviors of women than men. Bean and Covert (1973) concluded that certain personality measures have "little predictive value" for male attrition but significant value for women.

Studies with Leisure and/or Extra-Curricular Activities as Variables

In reviewing the attrition research from 1950 to 1975, Pantages and Creedon (1978) concluded that "no clear picture" emerges of the effects of participation in extracurricular activities on attrition. They cited the contradictory evidence. Some studies cited (e.g., Chase, 1970; Schmid and Reed, 1966; Sexton, 1965; and Tinto, 1975) claimed the greater the participation, the greater the persistence in college. Also cited is Carew's finding (1957) that there is no relationship between the amount of time spent in extracurricular activities and grade point average, although twice as much student time was devoted to these activities than to academics. Sexton's (1965) study drew relationships between the types of activities and academic success, "concentrated interest in dramatics, music and athletics usually is characteristic of university dropouts." Superior students are involved with "cultural clubs, departmental clubs, and publications."

Astin's studies of higher educational institutions and students' responses to them have spanned several decades. In his book Four Critical Years (1977), he stressed the significance of the interplay of a college's specific environmental characteristics and student experiences in college. The "intensity of exposure" (degree of actual involvement, informal interaction with faculty, athletics, student government, and academic activity) influences persistence as well as student satisfaction with the institution. Astin recommended enhancing persistence by increasing the number of student organizations and extracurricular activities, opportunities for part-time jobs on campus, recreational facilities, cultural events, and other programs designed to get students to remain on campus in their free time.

The concept of interplay between student and specific college environment is further reiterated by Tinto (1975), who cited similar types of involvement as Astin. Students need at least one support or friendship group to have "social fit", and thus a variety of student subcultures promote persistence. His research found academic dismissals as lacking in both intellectual and social development, or socially integrated "to an extreme" with no value or attention given to academics. Voluntary withdrawals, on the other hand, are primarily social isolates.

Terenzini and Pascarella (1978) tested Tinto's model of student attrition on a sample of freshmen who had voluntarily withdrawn by the end of their first year. The single most important variable related to attrition or persistence was the degree of informal faculty interaction. Also, for female subjects, the degree of peer contact was related to retention. Differences by sex were also reported by Lin and McKeachie (1971) in their inventorying of male and female college students' activities and goals; women identified greater needs for activities to build interpersonal relationships.

A study which systematically identifies and measures use of discretionary time by freshmen is one by Baker and Siryk (1980). They devised a checklist of campus organizations, campus public events of the previous two months, and campus recreational facilities. They then assigned weighted values to these items that reflect the amount of time spent, frequency of contact, degree of active or passive involvement, and the amount of interaction with others. The result was an index of the individual's extent of involvement with and commitment to the immediate social system. Enrollment status was used as the measure of adjustment to college. Although the activities checklist correlated significantly with a prematriculation alienation scale, no correlations were explored between enrollment status and the checklist.

The usefulness of merely quantifying or inventorying activities without also obtaining some type of affective measure can be questioned. A particular activity may have differing meaning and degree of satisfaction for individual students. Knowing the type and amount of activity does not necessarily reveal whether students' interpersonal needs were met, or whether students' experienced satisfaction with their leisure.

In fall of 1979, the author conducted a study of 73 sophomores, juniors, and seniors at Rollins College to answer the question, "What are the work (study)/leisure patterns of Rollins College students, and how do their patterns relate to personality types and college grades?" (Provost, 1980). The specific variables investigated were number of hours of paid work and study per week, leisure interests as measured by the Leisure Interest Index (Loesch, 1980), leisure satisfaction as measured by the Leisure Satisfaction Index (Rimmer; 1979), personality type as measured by the Myers-Briggs Type Indicator, and grade point average.

Although the sample was small and contained a larger percentage of females, several significant relationships and some trends were found. Leisure interests varied significantly by sex: women scored higher than men on the Passive Pastimes subscale (walking, visiting art museums, sunbathing, etc.) and on the Artistic Activities subscale. Men, however, scored much higher than women on the Active Pastimes subscale (jogging, carpentry, football, etc.). No significant differences occurred for Leisure Satisfaction Index subscales, although a negative correlation of 0.25 appeared between grade point average and Social Interaction (sharing interests, meeting people, etc.). Introverts had higher grade point averages than Extraverts, significant at the .01 level.

Ragheb and Beard (1980) reported several of their studies on leisure satisfaction. These authors found that leisure choices were influenced more by satisfaction gained from doing the activity than from leisure attitudes. They claimed that "social interactive leisure choices contribute consistently to the welfare and the well-being of individuals". (p. 333)

Ragheb and Beard developed a Leisure Satisfaction Scale using a subject pool of 950 males and females varying in age, marital status, education, and income. They found that female subjects derived more satisfaction from relaxational aspects of leisure activities than males, whereas males derived more satisfaction from physical activities. There were also significant differences among various age groups for types and amounts of leisure satisfaction. The authors speculated that "On a social psychological level, leisure satisfaction could be related to mental health, adjustment, depression, suicide rate, and self-concept". (p. 349) Attrition and grade point average could logically be added to this list. It can also be noted that Crandall, Nolan, and Morgan (1980), after reviewing studies of the relationships of leisure activities to social interactions, stressed social contact as an important motivator or satisfier in many leisure activities.

In summary, the literature generally points to extracurricular activities and other out-of-class and on-campus experiences as crucial to social integration and persistence. Voluntary withdrawals are especially associated with lack of participation and involvement in the college environment. Few studies have successfully developed clear measures for these factors, however, and findings vary considerably from study to study. None of these studies have addressed broader issues of leisure beyond the more structured or organized activities, perhaps because of the difficulty of measuring these leisure behaviors, attitudes, and satisfactions.

Studies with Personality Variables

A limited number of attrition studies have considered personality variables in well designed methodologies. The most commonly used personality measures have been the Minnesota Multiphasic Inventory (MMPI), California Psychological Inventory (CPI), and the Omnibus Personality Inventory (OPI). Some studies have utilized the Myers-Briggs Type Indicator (MBTI). Many of these studies focus on the relationship of personality characteristics to academic success and academic failure/dismissal.

Heilbrun (1965) was one of the first researchers to study the relationship of personality factors to college dropouts. His study at a large state university was limited by his simplistic definition of dropout as anyone from the original freshman sample not registering in the sophomore year. This thirteen month longitudinal study, assuming a value-conformity hypothesis, predicted that dropouts would be more assertive and less task-oriented than non-dropouts. Intelligence/ability was controlled by matching each dropout with a non-dropout of an "identical ability score." Personality differences, using an adjective checklist, were studied on three ability levels and for sex separately. His findings supported his prediction but only for the high-ability group.

Studies Using the OPI

Several studies found significant differences in personality factors of dropouts and persisters utilizing the OPI (e.g., Alfert and Suczek, 1961; Hannah, 1971; Rose and Elton, 1966). Hannah's data from 13 private colleges point to a profile of the dropout (not differentiated by voluntary withdrawal or dismissal) as having a "restless, unpredictable spirit"; thinking deeply and acting on feelings rather than measured consequences; "anxious about the environment and themselves"; needing independence and seeking ways to test that need. (p. 19) Alfert's and Suczek's findings from the freshman class of a large state university are consistent with Hannah's; both male and female dropouts have greater impulse expression and rebelliousness. The female dropouts, more than the males, questioned conventional attitudes, were more adventurous, valued sensation, and had wider interests. This study did differentiate between academic and voluntary dropouts and found the latter group more mature, desiring more autonomy than what the university environment provides.

Studies Using the MMPI

Two studies representative of attrition research utilizing the MMPI are those by Faunce (1973) and Vaughan (1968). Faunce controlled for ability and sex on MMPI scales comparing "nongraduates" with "graduates" of a state university. Nongraduate females have little self-insight, difficulties with interpersonal relationships, low impulse control, and inner tension. Also the female dropouts have more concerns about heterosexual relationships. Faunce, in summarizing her own research as well as that from the literature, described the ideal student as more conforming, task-oriented, deferring to authority, interested in others but not overly social, emotionally stable, and viewing college as preparation for "gainful employment." Vaughan drew parallel conclusions, identifying the academic dismissals as more impulsive, unstable and restless. However, he did not find these MMPI characteristics in the voluntary withdrawals; rather, they were "suspicious, over-sensitive, and egotistic."

Use of the CPI

Astin (1964), reviewing the literature, claimed that the CPI is a better predictor of dropouts than the MMPI.

In his longitudinal study of male and female national merit finalists, however, similar personal characteristics were found for dropouts as in the cited MMPI studies. Astin's dropouts are more aloof, self-centered, impulsive and assertive than non-dropouts. Astin also attempted to find relationships among eleven institutional, environmental traits, (e.g., affluence and size of student body, etc.), personal characteristics, and dropouts. One environmental trait was found to be significant but only for female dropouts; females have a higher chance of dropping out in colleges with a "relatively high proportion of men" in the student body. Astin speculated that this finding may reflect a higher rate of women marrying while students and subsequently dropping out.

Studies Utilizing the MBTI

Most of the research with the Myers-Briggs Type Indicator attempts to find relationships with academic success and/or dropout/persistence in college. This type of study often attempts to increase the predictive powers of SAT scores for academic performance in college by factor loading with the MBTI scales. Although MBTI results are expressed by sixteen possible types, most of the research has used only the individual scales. There are four scales: Extravert (E) - Introvert (I); Sensing (S) - Intuition (N); Thinking (T) - Feeling (F); and Judging (J) - Perception (P). An individual's score or result is expressed as one of the two letters from each of the four scales; thus there are sixteen possible combinations.

An example of the use of these four scales is the 1965 study of male freshmen from two colleges (sample size 426) by Stricker, Schiffman, and Ross. Freshman year grade point average and enrollment status, measured at the end of the freshman year, were compared by MBTI type, obtained during orientation. Intercorrelation of predictors and criteria (SAT verbal and math; E-I, S-N, T-F, and J-P scales; dropout/stay; and grade point average) revealed a "slight but significant improvement in prediction" by using the MBTI. MBTI scale correlations were only significant for one of the two colleges and for the total sample. The higher the Intuition, the less chance of dropping out. The higher the Feeling scale, the more likely the student will drop out. Extraversion also correlates with achievement in leadership and dramatics. Feeling correlates with achievement in the literary, musical, and graphic arts fields.

In 1979, Bourg reported on a study of academic success of college freshmen in a large state university which serves a primarily rural population and has an open admissions policy. This study was stimulated by an attrition rate of 43.6% and a large percentge of students in remedial level courses. The MBTI was administered in all freshman English sections during the fourth week of the first term. Additional data for eight academic variables were obtained at the end of that term. The academic variables were grade point average, advanced placement program, remedial placement, enrollment in honors programs, scholarship awards, unselected major, resignation from the university (dropout), and withdrawal from one or several courses. No significant differences were found by MBTI type for dropouts and course withdrawals. Several of the academic variables correlate with MBTI scales, however. For instance, Intuition is "the most important factor in academic success"; the Intuitive-Judging types have the highest grade point average; and the Sensing types are the "lowest achievers." Greater academic achievement occurs for Judging than for Perceptive types given the same aptitude. Bourg's results for academic success are similar to those of Barberouse, 1965; Conary, 1965; Myers, 1962; Nichols and Holland, 1963; and Stricker et al., 1965.

Many studies have utilized the MBTI to examine persistence/non-persistence in specific academic and professional programs. Morris (1964) studied superior female students' persistence in advanced English and math placement programs. Rezler, Mrtek, and Gutmann (1975) researched persistence among pharmacy students. Much of this type of research has been in the health professions (McCaulley, 1977; Myers, 1962). These studies, although demonstrating a useful methodology for studying a certain type of persistence, do not go far enough in terms of overall persistence in the college or university. It is not known, for example, when the pharmacy student leaves the school of pharmacy, whether he/she leaves the institution as well. However, voluntary withdrawal from college may in part be explained by switching from one major to one offered only at another college, and in this sense correlations of MBTI type with persistence in certain academic programs may be useful.

Several studies have attempted to show relationships of MBTI type to extracurricular activities and to attitudes toward participation. At a large university, Stalcup (1967) compared MBTI type with 229 extracurricular activities in the following categories: union building committee, student government, political parties, leadership and honoraries, service organizations, intramural sports, intercollegiate sports, cultural groups, publications, religious organizations, interest and professional clubs, professional honoraries, and Greek social organizations. Subjects checked activities in which they participated over the freshman-sophomore years, the term in which they participated, and the average number of hours per week spent at that activity. Unfortunately, findings are not reported with statistical significance. However, on the basis of frequency data, Stalcup concluded that there is "little difference" in the sixteen types in regard to the amount of time spent on activities. Largest nonparticipation occurs among Introverts. Most frequently listed activities for males were intercollegiate sports, fraternities, publications, and professional honoraries. The most frequent female activities were sororities, publications, service organizations, and cultural organizations. Certain types were reported as more frequent in certain activities, but no operations for statistical significance were computed. Nevertheless, the study is interesting because of its approach to inventorying activities and attempting comparison by type.

Another study at the same university (Grant, 1965) compared MBTI type with certain out-of-class behaviors such as frequency of drinking, likelihood of joining a fraternal organization, and frequency of dating. Certain types appeared more frequently in some of these categories of behavior. For example, Introvert Sensing types most frequently reported they would "definitely not join" a Greek organization. Although neither of these studies bear directly on attrition research, study of student participation and out-of-class behaviors as related to personality measures can be one approach to the social integration component of Tinto's attrition model.

Summary of Personality Variables

Dropouts seem more likely than persisters to have the following characteristics: rebelliousness, nonconformity, assertiveness, and independence (Astin, 1977; Bean and Covert, 1973). Beyond these general characteristics, studies have had limited success in correlating dropouts with specific personality traits as measured by certain instruments. The MBTI holds promise for identifying academically successful students and preferred activities and degree of participation. Furthermore, researchers such as Astin and Myers suggest that institutions may wish to use personality measures to determine if there are certain student characteristics that "fit" with a specific college's environment, and reciprocally if certain characteristics may be more likely in dropouts from that same environment.

The Myers-Briggs Type Indicator

Development of the MBTI

The MBTI was developed as a questionnaire to implement Carl Jung's theory of psychological types. His theory derived from his practical experience with patients. What appear to be random differences in human behavior are actually orderly and consistent patterns based on certain differences in mental functioning. These basic differences are related to ways individuals prefer to use their minds. Jung (1971) postulated that everyone uses four basic mental functions (Sensing, Intuition, Thinking and Feeling), and everyone has a basic orientation to life (either Extraverted or Introverted).

Individuals differ in the degree of development of these functions and orientation and in the order in which they prefer to use these functions. Isabel Myers, in her development of the questionnaire in the 1940's, based on Jung's theory, added two more preferences (Judging and Perception), to make explicit a dimension of Jung's theory which had been implicit.

The MBTI is organized into four dichotomous scales, reflecting Jung's theory of dichotomous preference in mental functioning. The scales are:

Extraversion (E)--Introversion (I)--whether the preference is to direct interest and attention to the outer world of actions, objects, and persons (E); or to the inner world of concepts and ideas (I). Extraverts prefer action and social contacts, are generally at ease communicating, and are aware and reliant on the environment for stimulation and guidance. Extraverts would most likely prefer activities involving frequent interactions, quick action, communication, and teamwork. Introverts tend to be thoughtful or contemplatively detached; sometimes oblivious to surrounding environment; desirous of private time; and likely to form a few close friends. Generally Introverts would prefer activities that require sustained attention and may not involve others.

Sensing (S)--Intuition (N)--whether the individual prefers to perceive using the senses (S) or using intuition (N). Sensing types rely on experience rather than theory, trust conventional ways of doing things, prefer the concrete to the abstract and complex, and move systematically step-by-step in perceiving or learning. Sensing types generally prefer activities requiring practical application of knowledge and working with tangible elements. Intuitives demonstrate insight into complex, abstract situations; enjoy symbolism and theory; and often see novel or creative future possibilities. Intuitives prefer activties that are complex, where creative or novel approaches can be tried, and that provide new challenges.

Thinking (T)--Feeling (F)--whether decisions or judgments are based on objectively, impersonally considering causes, consequences, and facts (T); or are based on subjectively and personally weighing values and the effects of choices on others (F). Thinking types tend to be analytical; concerned with fairness and objectivity; logical. They often find technical activities more appealing than interpersonal activities. Feeling types tend to be warm, empathic with a strong need for affiliation. They tend to prefer activities involving interpersonal skills.

Judgment (J)--Perception (P)--whether preference is to live in a decisive, planned and orderly way that aims to regulate and control events (J); or to live in a spontaneous, flexible way that aims to understand life and adapt to it. Judging types often appear responsible, dependable, and decisive. Perceptive types are likely to be curious, receptive, understanding, and flexible.

A person's type is a combination of four letters, one from each scale. Thus there are 16 possible types.

The questionnaire format is forced-choice items of two types: word pairs that appeal and behavioral statements. There are 166 items. Reading level is at junior high ability. Answer sheets can be hand or computer scored.

MBTI norms have been developed using large and diverse samples from junior high, senior high, college, and adult populations.

Reliability

Split-half procedures, dividing items for each of the four scales, yield Spearman-Brown correlations for the specific scales ranging from .82 to .87. Within particular samples, lowest correlations were in the underachieving 8th grade (.44) and non-prep 12th grade (.60) on the TF scale. Myers speculated that in certain groups this particular dimension (TF) is not yet developed and that low correlations are due to this maturation process, not to the instrument. College level groups have higher TF correlations.

In Carlyn's review of the MBTI (1971), she cautioned that use of the Spearman-Brown formula is contingent on the assumption of normal distribution of scores, whereas MBTI scores are really not normally distributed. A more conservative estimate is obtained using a phi correlation coefficient and an assumption of dichotomous, not continuous scores. Phi coefficients for the scales range from .43 - .75 (T-F) to .58 - .84 (J-P).

Carlyn's discussion of test-retest reliability (stability) revealed that a majority retain the same four preferences upon retest or change only in one preference. She cited Levy's findings (1972) of correlation coefficients of .78 - .83, using continuous scores and retesting after two months. Also cited were Stricker's and Ross' correlations (1965) of .48 for the T-F scale and .73 for the E-I scale, with retest after 14 months.

Validity

Concurrent validity was established through correlations with these instruments: Gray-Wheelwright, Strong Vocational Interest Blank, Edwards Personal Preference Schedule, Personality Research Inventory, and the Alpert-Lindzey Study of Values. A variety of studies demonstrated construct validity: Faculty Ratings; Turnover in Utility Jobs, MacKinnon's studies on creativity (Myers, 1962).

More recently, McCaulley (1977) reported product moment correlations of MBTI continuous scores from a large sample of medical students with scales of other personality tests (e.g., 16 Personality Factor Test; Omni- bus Personality Inventory; Opinion, Attitude, and Inter- est Survey). Her data further establish concurrent val- idity through significant relationships among many of the personality test factors and the MBTI scales.

Uses

The MBTI has wide usage in marriage counseling, career counseling, organizational development, research involving a personality dimension, and more recently in college student personnel research. W. Harold Grant, while head of Student Development at Auburn University, used the MBTI extensively for programming activities and residence hall environments. In one study (Grant, 1965a) he compared 1,413 freshmen MBTI types with a variety of demographic factors and student behaviors such as leisure reading, dating, intent to join a fraternity or sorority, and drinking behavior. Certain types were more prevalent in specific activities. Another study by Grant (1965b) examined distribution of types seeking counseling and nature of presenting problems. A strong pattern emerged of the introvert feeling combination being less "at home" in the Auburn College environment. The extravert sensing combination was under-representated among students counseled. Grant speculated that this combination finds the environment "suitable" and therefore does not seek counseling.

Harvey (1972) investigated study habits and attitudes and MBTI type and could not find significant differences by type. He concluded that difficulty in finding a relationship of academic achievement to personality derived from (1) inconsistency in grading methods; (2) variation in energy output of various students which is probably independent of ability; and (3) difficulty of measuring the personality factor in studying.

One other study, while not sampling college students, is significant in terms of implied adjustment to the environment. Barry (1967) compared physical activity, stress, post-coronary patterns, college graduates, and creative men in relation to MBTI type. The cardiac patients had an unusually high percentage (96%) of sensing and judging types. The SJ combination is more likely to respond to stress with stereotyped inflexible behavior where variability of response (N and/or P) would constitute adaptive behavior.

The MBTI is, therefore, a good choice for this attrition study because of its well-documented and long-established validity and reliability, dimensions which deal with various styles of perception and judgment, and availability of previous data bases.

Limitations of the MBTI

The MBTI's major limitation is possible change in type over a period of time. Because college students are in active developmental growth, it is likely that scores will change to a certain degree. The change in score may not be sufficient to change the letter preference or type, however. More research is needed on the issue of score stability, but in general, the higher the score, the less likely the type will change. Myers (1962) did not deal with this issue in specific terms, but Stalcup (1968) compared MBTI scores from freshmen admittance at Auburn University to retest scores in the sophomore year. Besides examining participation in activities, he examined changes in individuals' scores. Over the two year period (pre and post-test), 33% of the sample changed at least one preference letter. The scale which changed most frequently was the SN.

However, for early intervention with freshmen and for admissions purposes, these initial MBTI preferences are the crucial ones, regardless of whether individuals change over time.

The Leisure Satisfaction Scale (LSS)

The purpose of the Leisure Satisfaction Scale (LSS), developed by Beard and Ragheb in 1978, is to determine the extent to which different kinds of needs are satisfied through one's leisure activities (Beard and Ragheb, 1980). Development of the LSS began with a literature review of the effects of participating in leisure activities, recreation, and play. Commonalities in these effects from participation were identified and became the subscales. The six subscales and a brief description of high scoring individuals for each scale follow (Ragheb and Beard, 1980, p. 337):

Psychological--report that their leisure activities provide psychological benefits such as a sense of freedom, enjoyment, involvement, and intellectual challenge.

Educational--report that their leisure activities provide intellectual stimulation and help them to learn about themselves and their surroundings.

Social--report that their leisure activities provide rewarding relationships with other people.

Relaxational--indicate that leisure activities are seen as providing relief from the stress and strain of life.

Physiological--indicate that leisure activities are engaged in to develop physical fitness, stay healthy, control weight, and otherwise promote physical well-being.

Aesthetic--view the areas in which they engage in their leisure activities as being pleasing, interesting, beautiful, and generally well-designed.

The LSS consists of 51 statements requiring a response on a 5-point Likert scale: a score of "1" meaning "almost never true for you" and a score of "5" meaning "almost always true for you."

Validity

The LSS was reviewed by 83 "experts"--professors, researchers, and practitioners in leisure and recreation--to establish content validity and also solicit comments about face validity, clarity of items, and reading level. Construct validity was established through factor analysis after field testing. The LSS was field tested on two samples, totaling about 1,000 subjects. Subjects were primarily students. The sample contained both sexes, a diverse age range, diverse socio-economic and educational backgrounds.

Reliability

Internal consistency was established on these samples with alpha reliability coefficients ranging from .85 to .92 for the six subscales. The test developers state that stability of individual scores over time is yet to be established.

Short Form of the LSS

A shorter form which reduces the items from 51 to 24 with four items for each subscale has been developed to facilitate research. Ragheb and Beard state:

> An assumption underlying this effort to shorten the LSS was that most research studies utilize mean scores for which the standard errors are not as sensitive to measurement errors as are an individual

> person's score. Thus this fact, together with the knowledge that polychotomously scored items, such as those used in the LSS, may provide substantially reliable scores for scales having few items, prompted the structuring of a shortened form. (p. 344)

Items were selected for the short form using the following criteria:

-The item had to correlate well with the subscale factor.

-The item had to preserve the content validity of the subscale (p. 344). Subscale reliabilities range from .80 to .93. Total score reliability is .93.

Limitations of the LSS

Concurrent validity has not been established. Applications of the instrument and additional data generated through research would strengthen the validity and reliability statements. The LSS scores for individuals may not be stable over time, and varying leisure opportunities and responses could possibly affect scores. On the other hand, satisfaction at the time of administration of the LSS is the focus when simultaneously noting enrollment status.

Specific procedures for use of these instruments and other methodological issues will now be discussed in the following chapter.

CHAPTER III

METHODOLOGY

A longitudinal design which is correlational and descriptive has been used to examine relationships among personality type, leisure satisfaction, grade point average, and attrition. Subjects for this study are the class of 1984 at Rollins College, (i.e., freshmen who matriculated in Fall, 1980). These students have been followed through the Fall 1981 academic term. This population and generalizability of the study to other college populations, as well as research procedures, statistical methods, and design limitations, are discussed in this chapter.

Variables

Variables in the longitudinal study are

- enrollment status determined at the end of the Fall 1981 term by several methods. Subjects who have already withdrawn from Rollins, "leavers", have been identified through the Registrar's Office. Using the Registrar's records, voluntary withdrawals have been differentiated from academic dismissals, which were not included in this study. Subjects withdrawing for medical/psychiatric reasons were also not included. Those subjects still enrolled at Rollins in Fall, 1981, the "persisters", have been surveyed as to whether they

a) plan to complete their undergraduate work at Rollins; or

b) plan to leave before completing undergraduate work. Thus there are three categories of enrollment status: voluntary withdrawal, plan to persist through graduation, plan to leave before graduation.

- personality type as measured by the Myers-Briggs Type Indicator, Form F, during Orientation Week, September, 1980.

- grade point average at the time of withdrawal or as of Fall, 1981.

- leisure satisfaction as measured by the Leisure Satisfaction Scale, Short Form, in Fall, 1981.

Other variables which have been examined in relation to enrollment status, personality type, grade point average, and leisure satisfaction are

- sex--male or female
- residential status--living on or off campus

The Population

Subjects of this study are students of the Rollins College class of 1984 who matriculated in September, 1980. There were 206 men and 206 women for a total sample size of 412. During Orientation Week, these subjects completed the Myers-Briggs Type Indicator, Form F, in a monitored, large group setting. Students were assembled to take a math placement test at that time and were also asked to complete voluntarily the MBTI. The purpose of the MBTI, as explained to the students, was to assist with institutional research and to provide useful information for academic advising and career counseling. Students were told they could learn their individual results through the office of the Personal Development Counselor (i.e. the author).

Characteristics of the Sample

The majority of subjects are 18 or 19 years of age, with few exceptions. Ethnic and racial composition is: 12 blacks, 2 Asians, 9 Hispanics, and the remainder white. Mean SAT scores are 479 for verbal, 520 for math, and 999 for the total scores. Of the sample, 36.7% ranked in the top quintile of their high schools, 28% in the second quintile, and 75.8% in the top half. In the yearly survey conducted through the Cooperative Institutional Research Program, 45% of the sample estimated parental income to exceed $50,000. These characteristics are consistent with other freshmen classes in Rollins' recent past.

Personality Type Distribution in the Sample

Type theory, based on the MBTI, would predict a larger percentge of Intuitives in college than in the general population, and a larger percentage of Intuitive Feeling types in liberal arts than in vocational and technical colleges. This sample is consistent with the theory. (The types which occurred most frequently are those containing the scales of Intuition and Feeling). ENFP (N=75) and INFP (N=40) are the most frequent of the sixteen types for both men and women. Least frequent is the ENTJ, numbering 14 in the sample. Data on distribution of all types in the freshmen class are included in Chapter IV. From descriptions in the literature of other college samples (e.g., Bourg, 1979; McCaulley, 1975; Myers, 1962, 1975), distribution of MBTI types in the Rollins sample seems representative of four year liberal arts colleges and humanities majors of larger universities.

The Rollins College Environment

Rollins College is a private liberal arts four year college with an approximate enrollment of 1400 full-time students in daytime courses. Typically the student body ranges in age from 18 to 23, has about equal numbers of men and women, and is primarily white, upper middle class. Approximately 40% of the student body express interest in business/economics fields, and 40%-50% have fathers who are "businessmen." About 40% of students have mothers who are not employed outside the home. The second most popular area of study is communications, followed by the pre-professional programs (premedical, preveternarian, prelaw, etc.). The traditional liberal arts majors are represented: English, psychology, languages, history, sociology/anthropology, theater, art, music, philosophy, political science, economics, and the sciences. There is also an education major.

Over half the students are from out-of-state, primarily from the Northeast. About 85% of the students live on campus, while the remainder commute. The institution encourages a sense of community on campus, with residence halls centrally located and policies which encourge living and eating on campus. Fraternities and sororities are highly visible through on-campus housing and organized activties. The student body is 40-50% "Greek." There are a variety of extracurricular activities sponsored by student organizations and an active, physical, outdoor atmosphere created by the geographic location and athletic programming. The college is adjacent to the main street of a town of approximately 45,000 people and in a metropolitan area of 600,000.

Attrition at Rollins College

The attrition rate for the four year period from matriculation through the senior year has ranged from 49% to 59%. These data were compiled from classes in the 1970's. The following table compares Rollins' attrition rate with that of other institutions:

TABLE 2
PERCENTAGE OF INCOMING FRESHMEN
ATTRITION AT THE END OF FOUR YEARS

	Year 1	Year 2	Year 3	Year 4
28 Public Institutions*	22.0	33.2	44.5	50.0
12 Private Church Related Colleges*	26.8	44.7	50.7	51.7
Rollins (average)	26.1	48.9	52.3	54.9
Rollins (class of 1976)	25.0	44.0	45.0	49.0

* (Cope, 1975, p. 4).

The largest percentage of students leave between the freshman and sophomore years, as is the case in most four year institutions. Academic dismissals account for about 13% of this attrition rate.

Approximately 75% of those withdrawing plan to attend another college. Survey of those withdrawing during the 1976-1977 academic year yielded a number of self-reported reasons for leaving Rollins (recorded at the time of withdrawal). The top five reasons for men, women, Greeks, independents, and commuters are

- for men
  1. Insufficient number of courses in field of interest
  2. Don't like general social atmosphere
  3. Prefer increased academic emphasis
  4. Financial difficulties and (tied ranking) change in academic/career goals
  5. Limited social options
- for women
  1. Insufficient number of courses in field of interest
  2. Limited social options
  3. Don't like general social atmosphere

4. Limited extracurricular activities
5. Financial difficulties

- for Greeks
    1. Insufficient number of courses in field of interest
    2. Change in academic/career goals and (tied) don't like general social atmosphere
    3. Limited social options
    4. Prefer increased academic emphasis and (tied) family concerns
    5. Limited extracurricular activities
- for independents
    1. Insufficient number of courses in field of interest
    2. Don't like general social atmosphere
    3. Limited social options
    4. Change in academic/career goals
    5. Financial difficulties
- for commuters
    1. Financial difficulties
    2. Change in academic/career goals
    3. Insufficient number of courses in field of interest

4. Family concerns
5. Medical difficulties and (tied) program too demanding and (tied) don't like general social atmosphere

The validity of the reasons given at time of withdrawal is questionable, considering the stress and frequent emotionality of the withdrawal process. Furthermore, students who are persisters often complain about some of the same issues (i.e., "Don't like general social atmosphere"). The college has been fairly unsuccessful to date in identifying more specifically and concretely issues within this "social" area.

Generalizability of the Sample

This sample seems similar to previous freshman classes at Rollins. The sample also appears to be representative of populations in other small, private, liberal arts, residential colleges that are oriented to the traditional college student.

Methodological Procedures

Follow-up data on all students who entered as freshmen in Fall, 1980, were obtained in Fall, 1981, during the registration period for Spring Term. The Registrar's Office gave support to this study and incorporated research packets into the registration procedure.

Students who are subjects of this study were identified by packets labeled with their names. Each packet contained

-a brief description of the research project and request for permission to use their data, while not identifying them as an individual

-the Leisure Satisfaction Scale and answer sheet

-a brief information form to identify enrollment status, college residence, and leisure activities

The question about college leisure activities is included as a check, to determine how students perceive the term "leisure" and what types of activities are common in the sample. Copies of these materials are found in the Appendices.

Those subjects who did not appear for registration, although enrolled that term, were contacted by a letter requesting them to come to the Office of the Dean of the College to complete materials in the packet. A copy of this letter is included as Appendix C.

Subjects who had already withdrawn by the time of registration in Fall, 1981, were not available to complete packets. Data on these subjects were obtained from the Registrar's and Academic Offices. These data included

-grade point average at time of withdrawal

-identification as academic dismissal or voluntary withdrawal

-residency status at time of withdrawal (on or off campus)

The only information that was not obtained from this group of subjects is that from the Leisure Satisfaction Scale.

All data were placed in the Rollins computer.

Data Analysis

Measures of central tendency for the sample include

-distribution of the 16 types for the total and by sex.

-Leisure Satisfaction Survey total scores and subscale scores for each MBTI type and for men and women.

-the number of voluntary withdrawals, persisters planning to graduate from Rollins College, and persisters planning to leave before graduation by MBTI type and by sex.

A wide variety of analyses are possible. Methods of analyses have been chosen which focus on differences in leisure satisfaction for a number of factors. Choice of method of analysis is also based on potential yield of useful results for practitioners and researchers. Therefore, data analysis explored differences between certain student groups, as stated in the series of null hypotheses. A significance level of .05 was set.

Differences in total LSS scores and subscale scores were explored among the following groups:

-men and women, utilizing the *t* test (Hypothesis #2).

-students who plan to persist to graduation and those who plan to leave prior to graduation, utilizing the *t* test (Hypothesis #1).

-students living on or off campus, utilizing the *t* test (Hypothesis #3).

-the 16 MBTI types, utilizing analysis of variance (ANOVA, Hypothesis #4).

Differences among students grouped by the 16 types, for men and for women, were explored by

-using a Selection Ratio Type Table (SRTT) for expected and observed frequencies of voluntary withdrawals and persisters (Hypothesis #5).

-by using ANOVA with mean grade point average (Hypothesis #6). Where ANOVA's are used, the *F* test determined where the data reached a level of significance.

The MBTI scales (E-I, S-N, T-F, J-P) for the total sample and by sex were tested for differences in the following variables, using the _t_ test:

-mean grade point averge (Hypothesis #6)

-mean LSS subscale scores and total scores (Hypothesis #4)

In addition, LSS mean subscale scores were correlated with grade point averge, for men and for women, using Pearson's product-moment correlation.

Methodological Assumptions

The study assumes that certain personality characteristics and degree of leisure satisfaction can be measured. Furthermore, the study assumes that students answered all questions during the data gathering process as honestly and objectively as possible. The assumption is made that leisure satisfaction and grade point averge are indicators of social and academic integration. The variables selected for study are assumed to be relevant to college adjustment, or more specifically, to the attrition patterns of college students.

Academic ability has not been controlled for the variables being researched, since this study addresses voluntary withdrawals but not academic dismissals. The assumption is that subjects in the sample have the academic ability necessary to function in college, and that differences in enrollment status are more likely related to nonintellective factors. There may be a few students who are exceptions to this assumption, i.e., those who voluntarily withdraw very early in their college careers before failing and subsequently being academically dismissed. The study assumes, however, that these exceptions are few and will not distort the data.

Methodological Limitations

Limitations of the MBTI and LSS have been discussed elsewhere, but a brief summary of these is offered. The LSS is a new instrument that has not established reliability over time. Although Ragheb and Beard assume leisure satisfaction is fairly stable, it is possible that satisfaction may fluctuate frequently and markedly in this sample of college students. Students also may be limited in their ability to evaluate their leisure satisfaction through responding to the questions on the LSS. LSS data were not obtained on those already withdrawn. This position is justified by the difficulty and expense in contacting dropouts, as well as the questionable validity of asking in retrospect for a measure of leisure satisfaction at college.

This study does not attempt to control for all extraneous factors such as parents' income, distance from home to college, academic major, etc. Nor does this study propose to identify all the variables associated with variance for enrollment status. Rather, by focusing on the non-intellective variables of personality and leisure, another piece can be added to the puzzle of attrition behavior, where prior research had contributed more in the intellective and socio-economic domains.

CHAPTER IV

RESULTS

Data were collected from remaining members of the class of 1984, then sophomores, during Spring Registration on the first weekend in December, 1981. Although the research packets were included with registration forms to be completed before leaving the registration site, 79 students failed to complete the research questions. Subject response rate was therefore 71%. The level of significance chosen for all statistical analyses was .05. It should be noted that because of the extensiveness of the data analyses, all data will not be reported here. Appendix G lists additional ANOVA's.

Sample

Sample mortality over the one and one-half year period is detailed in Table 3. Students were excluded from the study because of incomplete records, academic dismissal, medical withdrawal, or overseas study.

Data analyses, therefore, involved two data bases: the N = 361 base and the N = 189 sample of those completing the research packets.

TABLE 3
THE SAMPLE

	M	F	Total
Entering Freshmen Class of '84	206	206	412
Purged list (incomplete records)	3	5	-8
Academic dismissals	14	9	-23
Medical withdrawals*	4	2	-6
Overseas students	10	4	-14
Total	175	186	361
Those not completing research packets:			
Voluntary withdrawals prior to 12/81	47	46	-93
Students enrolled but not responding	37	59	-79
Those completing research packets	84	105	189

* Medical withdrawal is withdrawal or leave of absence due to medical/psychiatric condition.

Frequency of Variables

Table 4 includes frequencies of the variables: enrollment status, affiliation, and residence.

Frequencies of MBTI Types

Tables 5-9 are type tables which describe distributions of the 16 types within the following groupings: the base sample, females, males, voluntary withdrawals, those planning to graduate from that institution. The most frequently occurring types in the total sample for both sexes are the ENFP and INFP (Extravert and Introvert, Intuitive, Feeling, Perceptive). The least frequent type in the total sample is the ENTJ (Extravert,

TABLE 4
FREQUENCIES OF VARIABLES

Enrollment Status	N	% of Base N=361
1) Voluntary withdrawals	93 (47M, 46F)	26% (23% of original N=412)
2) Plan to leave before graduation from Rollins	55 (23M, 32F)	15%
3) Plan to graduate from Rollins	139 (65M, 74F)	39% (34% of original N-412)
4) No response	74	20%
Total	361	100%
Affiliation		
1) Greek organization	118	33%
2) No Greek affiliation	169	47%
No response	74	20%
Residence		
1) Live on campus	239	66%
2) Live off campus	49	14%
No response	73	20%

TABLE 5
TOTAL SAMPLE N=361
MBTI TYPE DISTRIBUTION

```
SOURCE OF DATA:                         GROUP                   MBTI TYPE TABLE
                                      TABULATED:            CENTER FOR APPLICATIONS
JUDY PROVOST                                                 OF PSYCHOLOGICAL TYPE
ROLLINS COLLEGE 1980               ALL FROSH STUDENTS
FALL FROSHSTUDENTS                                          LEGEND: % = PERCENT OF
                                                            TOTAL CHOOSING THIS GROUP
                                                            WHO FALL INTO THIS TYPE.
                                                            I = SELFSELECTION INDEX;
                                                            RATIO OF PERCENT OF TYPE
                                        N=  361             IN GROUP TO % IN SAMPLE.


      SENSING TYPES              INTUITIVE TYPES
 WITH          WITH          WITH          WITH                        N     %        I
 THINKING      FEELING       FEELING       THINKING
-------------------------------------------------------          E    214  59.28     1.00
| I S T J    | I S F J    | I N F J    | I N T J    | J          I    147  40.72     1.00
|            |            |            |            | U
|            |            |            |            | D          S    152  42.11     1.00
| N=  15     | N=  14     | N=  15     | N=  15     | G          N    209  57.89     1.00
|            |            |            |            | I
| %= 4.16    | %= 3.88    | %= 4.16    | %= 4.15    | N I        T    147  40.72     1.00
|            |            |            |            | G N        F    214  59.28     1.00
| I= 1.00    | I= 1.00    | I= 1.00    | I= 1.00    |   T
|            |            |            |            |   R        J    143  39.61     1.00
-------------------------------------------------------   O        P    218  60.39     1.00
| I S T P    | I S F P    | I N F P    | I N T P    |   V
|            |            |            |            |   E        IJ    59  16.34     1.00
| N=  15     | N=  21     | N=  34     | N=  18     |   R        IP    88  24.38     1.00
|            |            |            |            |   T
| %= 4.16    | %= 5.82    | %= 9.42    | %= 4.99    | P S        EP   130  36.01     1.00
|            |            |            |            | E          EJ    84  23.27     1.00
| I= 1.00    | I= 1.00    | I= 1.00    | I= 1.00    | R
|            |            |            |            | C          ST    72  19.94     1.00
-------------------------------------------------------  E          SF    80  22.16     1.00
| E S T P    | E S F P    | E N F P    | E N T P    | P
|            |            |            |            | T          NF   134  37.12     1.00
| N=  16     | N=  19     | N=  66     | N=  29     | I          NT    75  20.78     1.00
|            |            |            |            | V
| %= 4.43    | %= 5.26    | %=18.28    | %= 8.03    | E          SJ    81  22.44     1.00
|            |            |            |            | S E        SP    71  19.67     1.00
| I= 1.00    | I= 1.00    | I= 1.00    | I= 1.00    |   X
|            |            |            |            |   T        NP   147  40.72     1.00
-------------------------------------------------------   R        NJ    62  17.17     1.00
| E S T J    | E S F J    | E N F J    | E N T J    | J A
|            |            |            |            | U V        TJ    69  19.11     1.00
| N=  26     | N=  26     | N=  19     | N=  13     | D E        TP    78  21.61     1.00
|            |            |            |            | G R
| %= 7.20    | %= 7.20    | %= 5.26    | %= 3.60    | I T        FP   140  38.78     1.00
|            |            |            |            | N S        FJ    74  20.50     1.00
| I= 1.00    | I= 1.00    | I= 1.00    | I= 1.00    | G
|            |            |            |            |            IN    82  22.71     1.00
-------------------------------------------------------            EN   127  35.18     1.00

                                                                   IS    65  18.01     1.00
                                                                   ES    87  24.10     1.00

   NOTE CONCERNING SYMBOLS FOLLOWING THE SELECTION RATIOS:
        *  IMPLIES SIGNIFICANCE AT THE .05 LEVEL, I.E., CHI SQ. >  3.8;
        #  IMPLIES SIGNIFICANCE AT THE .01 LEVEL, I.E., CHI SQ. >  6.6;
        *  IMPLIES SIGNIFICANCE AT THE .001 LEVEL, I.E., CHI SQ. > 10.8.
_ (UNDERSCORE) INDICATES FISHER'S EXACT PROBABILITY USED INSTEAD OF CHI-SQUARE.

   BASE POPULATION USED IN CALCULATING SELECTION RATIO:
   ALL FROSH STUDENTS
   BASE TOTAL N = 361. SAMPLE AND BASE ARE DEPENDENT.

 * * * * CALCULATED VALUES OF CHI SQUARE OR FISHER'S EXACT PROBABILITY * * * *

        TYPE TABLE ORDER             E ******    IJ ******    SJ ******    IN ******
                                     I ******    IP ******    SP ******    EN ******
******  ******  ******  ******                    EP ******    NP ******    IS ******
                                     S ******    FJ ******    NJ ******    ES ******
******  ******  ******  ******        N ******
                                                 ST ******    TJ ******
******  ******  ******  ******        T ******    SF ******    TP ******
                                     F ******    NF ******    FP ******
******  ******  ******  ******                    NT ******    FJ ******
                                     J ******
                                     P ******
```

TABLE 6
FEMALE STUDENTS N=186
MBTI DISTRIBUTION

```
SOURCE OF DATA:                        GROUP                 MBTI TYPE TABLE
                                     TABULATED:          CENTER FOR APPLICATIONS
JUDY PROVOST                                              OF PSYCHOLOGICAL TYPE
ROLLINS COLLEGE 1980                 FEMALE STUDENTS
FALL FROSHSTUDENTS                                       LEGEND: % = PERCENT OF
                                                         TOTAL CHOOSING THIS GROUP
                                                         WHO FALL INTO THIS TYPE.
                                                         I = SELFSELECTION INDEX;
                                                         RATIO OF PERCENT OF TYPE
                                     N=  186             IN GROUP TO % IN SAMPLE.

      SENSING TYPES               INTUITIVE TYPES
WITH           WITH           WITH           WITH
THINKING       FEELING        FEELING        THINKING                N       %       I
---------------------------------------------------------
| I S T J     | I S F J     | I N F J     | I N T J     |  J        E    123  66.13   1.12#
|             |             |             |             |  U        I     63  33.87   0.83#
| N=    4     | N=   10     | N=    7     | N=    8     |  D
| %= 2.15     | %= 5.38     | %= 3.76     | %= 4.33     |  G        S     75  40.32   0.96
| I= 0.52     | I= 1.39     | I= 0.91     | I= 1.04     |  I  I     N    111  59.68   1.03
|             |             |             |             |  N  N
---------------------------------------------------------  G  T     T     58  31.18   0.77*
| I S T P     | I S F P     | I N F P     | I N T P     |     R     F    128  68.82   1.16*
|             |             |             |             |     O
| N=    3     | N=   10     | N=   16     | N=    5     |     V     J     79  42.47   1.07
| %= 1.61     | %= 5.38     | %= 8.60     | %= 2.69     |  P  E     P    107  57.53   0.95
| I= 0.39"_   | I= 0.92     | I= 0.91     | I= 0.54     |  E  R
|             |             |             |             |  R  T     IJ    29  15.59   0.95
---------------------------------------------------------  C  S     IP    34  18.28   0.75#
| E S T P     | E S F P     | E N F P     | E N T P     |  E
|             |             |             |             |  P        EP    73  39.25   1.09
| N=    8     | N=   13     | N=   40     | N=   12     |  T        EJ    50  26.88   1.16
| %= 4.30     | %= 6.99     | %=21.51     | %= 6.45     |  I
| I= 0.97     | I= 1.33     | I= 1.18     | I= 0.80     |  V        ST    26  13.98   0.70#
|             |             |             |             |  E  E     SF    49  26.34   1.19"
---------------------------------------------------------  S  X
| E S T J     | E S F J     | E N F J     | E N T J     |  J  T     NF    79  42.47   1.14"
|             |             |             |             |  U  R     NT    32  17.20   0.83
| N=   11     | N=   16     | N=   16     | N=    7     |  D  A
| %= 5.91     | %= 8.60     | %= 8.60     | %= 3.75     |  G  V     SJ    41  22.04   0.98
| I= 0.82     | I= 1.19     | I= 1.63#_   | I= 1.05     |  I  E     SP    34  18.28   0.93
|             |             |             |             |  N  R
---------------------------------------------------------  G  T     NP    73  39.25   0.95
                                                              S     NJ    38  20.43   1.19

                                                                    TJ    30  16.13   0.84
                                                                    TP    28  15.05   0.70#

                                                                    FP    79  42.47   1.10
                                                                    FJ    49  26.34   1.29#

                                                                    IN    36  19.35   0.85
                                                                    EN    75  40.32   1.15"

                                                                    IS    27  14.52   0.81
                                                                    ES    48  25.81   1.07

   NOTE CONCERNING SYMBOLS FOLLOWING THE SELECTION RATIOS:
        "  IMPLIES SIGNIFICANCE AT THE .05 LEVEL. I.E.. CHI SQ. >  3.8;
        #  IMPLIES SIGNIFICANCE AT THE .01 LEVEL. I.E.. CHI SQ. >  6.6;
        *  IMPLIES SIGNIFICANCE AT THE .001 LEVEL. I.E.. CHI SQ. > 10.8.
_ (UNDERSCORE) INDICATES FISHER'S EXACT PROBABILITY USED INSTEAD OF CHI-SQJARE.

   BASE POPULATION USED IN CALCULATING SELECTION RATIO:
   ALL FROSH STUDENTS
   BASE TOTAL N = 361. SAMPLE AND BASE ARE DEPENDENT.

  * * * * CALCULATED VALUES OF CHI SQUARE OR FISHER'S EXACT PROBABILITY * * * *

        TYPE TABLE ORDER          E    7.46   IJ   0.15   SJ   0.03   IN   2.47
                                  I    7.46   IP   7.74   SP   0.47   EN   4.45
  0.06     0.17     0.15    0.02              EP   1.74   NP   0.34   IS   3.16
                                  S    0.50   EJ   2.81   NJ   2.86   ES   0.61
  0.02     0.14     0.30    0.05  N    0.50
                                              ST   8.55   TJ   2.21
  0.02     2.29     2.67    1.30  T   14.46   SF   3.89   TP   9.73
                                  F   14.46   NF   4.71   FP   2.20
  0.95     1.13     0.00    0.03              NT   2.97   FJ   8.04
                                  J    1.31
                                  P    1.31
```

TABLE 7
MALE STUDENTS N=175
MBTI DISTRIBUTION

```
SOURCE OF DATA:                       GROUP                    MBTI TYPE TABLE
                                      TABULATED:            CENTER FOR APPLICATIONS
JUDY PROVOST                                                 OF PSYCHOLOGICAL TYPE
ROLLINS COLLEGE 1980                MALE STUDENTS
FALL FROSHSTUDENTS                                          LEGEND: % = PERCENT OF
                                                            TOTAL CHOOSING THIS GROUP
                                                            WHO FALL INTO THIS TYPE.
                                                            I = SELFSELECTION INDEX:
                                                            RATIO OF PERCENT OF TYPE
                                       N=  175              IN GROUP TO % IN SAMPLE.


     SENSING TYPES              INTUITIVE TYPES
WITH          WITH          WITH          WITH                          N     %        I
THINKING      FEELING       FEELING       THINKING
--------------------------------------------------------         E     91 52.00    0.88#
| I S T J    | I S F J    | I N F J    | I N T J    | J          I     84 48.00    1.18#
|            |            |            |            | U
|            |            |            |            | D          S     77 44.00    1.04
| N=  11     | N=   4     | N=   8     | N=   7     | G          N     98 56.00    0.97
|            |            |            |            | I
| %= 6.29    | %= 2.29    | %= 4.57    | %= 4.00    | N I        T     89 50.86    1.25•
|            |            |            |            | G N        F     86 49.14    0.83•
| I= 1.51    | I= 0.59    | I= 1.10    | I= 0.96    |   T
|            |            |            |            |   R        J     64 36.57    0.92
--------------------------------------------------------   O        P    111 63.43    1.05
| I S T P    | I S F P    | I N F P    | I N T P    |   V
|            |            |            |            |   E        IJ    30 17.14    1.05
| N=  12     | N=  11     | N=  18     | N=  13     |   R        IP    54 30.86    1.27#
|            |            |            |            |   T
| %= 6.86    | %= 6.29    | %=10.29    | %= 7.43    | P S        EP    57 32.57    0.90
|            |            |            |            | E          EJ    34 19.43    0.83
| I= 1.65*_  | I= 1.08    | I= 1.09    | I= 1.49    | R
|            |            |            |            | C          ST    46 26.29    1.32#
--------------------------------------------------------   E        SF    31 17.71    0.80*
| E S T P    | E S F P    | E N F P    | E N T P    | P
|            |            |            |            | T          NF    55 31.43    0.85*
| N=   8     | N=   6     | N=  26     | N=  17     | I          NT    43 24.57    1.18
|            |            |            |            | V
| %= 4.57    | %= 3.43    | %=14.86    | %= 9.71    | E          SJ    40 22.86    1.02
|            |            |            |            | S E        SP    37 21.14    1.08
| I= 1.03    | I= 0.65    | I= 0.81    | I= 1.21    |   X
|            |            |            |            |   T        NP    74 42.29    1.04
--------------------------------------------------------   R        NJ    24 13.71    0.80
| E S T J    | E S F J    | E N F J    | E N T J    | J A
|            |            |            |            | U V        TJ    39 22.29    1.17
| N=  15     | N=  10     | N=   3     | N=   6     | D E        TP    50 28.57    1.32#
|            |            |            |            | G R
| %= 8.57    | %= 5.71    | %= 1.71    | %= 3.43    | I T        FP    61 34.86    0.90
|            |            |            |            | N S        FJ    25 14.29    0.70#
| I= 1.19    | I= 0.79    | I= 0.33#_  | I= 0.95    | G
|            |            |            |            |            IN    46 26.29    1.16
--------------------------------------------------------            EN    52 29.71    0.84*

                                                                    IS    38 21.71    1.21
                                                                    ES    39 22.29    0.92

   NOTE CONCERNING SYMBOLS FOLLOWING THE SELECTION RATIOS:
        *   IMPLIES SIGNIFICANCE AT THE .05 LEVEL, I.E., CHI SQ. >  3.8;
        #   IMPLIES SIGNIFICANCE AT THE .01 LEVEL, I.E., CHI SQ. >  6.6;
        •   IMPLIES SIGNIFICANCE AT THE .001 LEVEL, I.E., CHI SQ. > 10.8.
_ (UNDERSCORE) INDICATES FISHER'S EXACT PROBABILITY USED INSTEAD OF CHI-SQUARE.

   BASE POPULATION USED IN CALCULATING SELECTION RATIO:
   ALL FROSH STUDENTS
   BASE TOTAL N = 361. SAMPLE AND BASE ARE DEPENDENT.

 • • • • CALCULATED VALUES OF CHI SQUARE OR FISHER'S EXACT PROBABILITY • • • •

       TYPE TABLE ORDER              E    7.46    IJ   0.16    SJ   0.03    IN   2.47
                                     I    7.46    IP   7.71    SP   0.47    EN   4.45
  0.06      0.17      0.15      0.02              EP   1.74    NP   0.34    IS   3.16
                                     S    0.50    EJ   2.81    NJ   2.86    ES   0.61
  0.02      0.14      0.30      0.25 N    0.50
                                                  ST   8.55    TJ   2.21
  0.02      2.29      2.67      1.30 T   14.46    SF   3.89    TP   9.73
                                     F   14.46    NF   4.71    FP   2.20
  0.95      1.13      0.00      0.03              NT   2.97    FJ   8.04
                                     J    1.31
                                     P    1.31
```

TABLE 8
VOLUNTARY WITHDRAWALS N=93
MBTI DISTRIBUTION

```
SOURCE OF DATA:                       GROUP                MBTI TYPE TABLE
                                    TABULATED:          CENTER FOR APPLICATIONS
JUDY PROVOST                                             OF PSYCHOLOGICAL TYPE
ROLLINS COLLEGE 1980             STUDENTS VOLUNTARILY
FALL FROSHSTUDENTS               WITHDRAWING            LEGEND: % = PERCENT OF
                                                        TOTAL CHOOSING THIS GROUP
                                                        WHO FALL INTO THIS TYPE.
                                                        I = SELFSELECTION INDEX;
                                                        RATIO OF PERCENT OF TYPE
                                      N=   93           IN GROUP TO % IN SAMPLE.


      SENSING TYPES              INTUITIVE TYPES
 WITH         WITH          WITH         WITH                        N   %        I
 THINKING     FEELING       FEELING      THINKING
------------------------------------------------------         E     51 54.84    0.93
| I S T J    | I S F J    | I N F J    | I N T J    | J        I     42 45.16    1.11
|            |            |            |            | U
|            |            |            |            | D        S     38 40.86    0.97
| N=   1     | N=   5     | N=   6     | N=   5     | G        N     55 59.14    1.02
|            |            |            |            | I
| %= 1.08    | %= 5.38    | %= 6.45    | %= 5.39    | N I      T     38 40.86    1.00
|            |            |            |            | G N      F     55 59.14    1.00
| I= 0.26    | I= 1.39    | I= 1.55    | I= 1.29    |   T
|            |            |            |            |   R      J     37 39.78    1.00
------------------------------------------------------   O      P     56 60.21    1.00
| I S T P    | I S F P    | I N F P    | I N T P    |   V
|            |            |            |            |   E      IJ    17 18.28    1.12
|            |            |            |            |   R      IP    25 26.88    1.10
| N=   7     | N=   7     | N=   8     | N=   3     |   T
|            |            |            |            |   S      EP    31 33.33    0.93
| %= 7.53    | %= 7.53    | %= 8.60    | %= 3.23    | P        EJ    20 21.51    0.92
|            |            |            |            | E
| I= 1.81    | I= 1.29    | I= 0.91    | I= 0.63    | R        ST    18 19.35    0.97
|            |            |            |            | C        SF    20 21.51    0.97
------------------------------------------------------ E
| E S T P    | E S F P    | E N F P    | E N T P    | P        NF    35 37.63    1.01
|            |            |            |            | T        NT    20 21.51    1.04
|            |            |            |            | I
| N=   4     | N=   1     | N=  16     | N=  10     | V        SJ    19 20.43    0.91
|            |            |            |            | E        SP    19 20.43    1.04
| %= 4.30    | %= 1.08    | %=17.20    | %=10.75    | S E
|            |            |            |            |   X      NP    37 39.78    0.98
| I= 0.97    | I= 0.20    | I= 0.94    | I= 1.34    |   T      NJ    18 19.35    1.13
|            |            |            |            |   R
------------------------------------------------------   A      TJ    14 15.05    0.79
| E S T J    | E S F J    | E N F J    | E N T J    | J V      TP    24 25.81    1.19
|            |            |            |            | U E
|            |            |            |            | D R      FP    32 34.41    0.89
| N=   6     | N=   7     | N=   5     | N=   2     | G T      FJ    23 24.73    1.21
|            |            |            |            | I S
| %= 6.45    | %= 7.53    | %= 5.38    | %= 2.15    | N        IN    22 23.66    1.04
|            |            |            |            | G        EN    33 35.48    1.01
| I= 0.90    | I= 1.05    | I= 1.02    | I= 0.60    |
|            |            |            |            |          IS    20 21.51    1.19
------------------------------------------------------          ES    18 19.35    0.80

  NOTE CONCERNING SYMBOLS FOLLOWING THE SELECTION RATIOS:
       *  IMPLIES SIGNIFICANCE AT THE .05 LEVEL, I.E., CHI SQ. >  3.8;
       #  IMPLIES SIGNIFICANCE AT THE .01 LEVEL, I.E., CHI SQ. >  6.6;
       $  IMPLIES SIGNIFICANCE AT THE .001 LEVEL, I.E., CHI SQ. > 10.8.
_ (UNDERSCORE) INDICATES FISHER'S EXACT PROBABILITY USED INSTEAD OF CHI-SQUARE.

  BASE POPULATION USED IN CALCULATING SELECTION RATIO:
  ALL FROSH STUDENTS
  BASE TOTAL N = 361. SAMPLE AND BASE ARE DEPENDENT.

 * * * * CALCULATED VALUES OF CHI SQUARE OR FISHER'S EXACT PROBABILITY * * * *

       TYPE TABLE ORDER           E    1.02   IJ   0.34   SJ   0.29   IN   0.06
                                  I    1.02   IP   0.43   SP   0.05   EN   0.01
 0.13     0.53     1.66     0.55              EP   0.39   NP   0.05   IS   1.04
                                  S    0.05   EJ   0.22   NJ   0.42   ES   1.54
 3.58     0.57     0.10     0.43  N    0.08
                                              ST   0.03   TJ   1.34
 1.00     0.05     0.10     1.25  T    0.00   SF   0.03   TP   1.30
                                  F    0.00   NF   0.01   FP   1.01
 0.11     0.02     1.00     0.53              NT   0.04   FJ   1.38
                                  J    0.00
                                  P    0.00
```

TABLE 9
STUDENTS PLANNING TO GRADUATE FROM ROLLINS COLLEGE N=139
MBTI DISTRIBUTION

SOURCE OF DATA:

JUDY PROVOST
ROLLINS COLLEGE 1980
FALL FROSHSTUDENTS

GROUP TABULATED:

STUDENTS PLANNING TO GRADUATE

N= 139

MBTI TYPE TABLE
CENTER FOR APPLICATIONS OF PSYCHOLOGICAL TYPE

LEGEND: % = PERCENT OF TOTAL CHOOSING THIS GROUP WHO FALL INTO THIS TYPE.
I = SELF-SELECTION INDEX; RATIO OF PERCENT OF TYPE IN GROUP TO % IN SAMPLE.

SENSING TYPES		INTUITIVE TYPES			
WITH THINKING	WITH FEELING	WITH FEELING	WITH THINKING		
I S T J N= 8 %= 5.76 I= 1.39	I S F J N= 6 %= 4.32 I= 1.11	I N F J N= 8 %= 5.76 I= 1.39	I N T J N= 6 %= 4.32 I= 1.04	JUDGING	INTROVERTS
I S T P N= 3 %= 2.16 I= 0.52	I S F P N= 6 %= 4.32 I= 0.74	I N F P N= 9 %= 6.47 I= 0.69	I N T P N= 6 %= 4.32 I= 0.87	PERCEPTIVES	
E S T P N= 6 %= 4.32 I= 0.97	E S F P N= 11 %= 7.91 I= 1.50	E N F P N= 20 %=14.39 I= 0.79	E N T P N= 11 %= 7.91 I= 0.99		EXTRAVERTS
E S T J N= 13 %= 9.35 I= 1.30	E S F J N= 11 %= 7.91 I= 1.10	E N F J N= 8 %= 5.76 I= 1.09	E N T J N= 7 %= 5.04 I= 1.40	JUDGING	

	N	%	I
E	87	62.59	1.06
I	52	37.41	0.92
S	64	46.04	1.09
N	75	53.96	0.93
T	60	43.17	1.06
F	79	56.83	0.96
J	67	48.20	1.22#
P	72	51.80	0.86#
IJ	28	20.14	1.23
IP	24	17.27	0.71"
EP	48	34.53	0.96
EJ	39	28.06	1.21
ST	30	21.58	1.08
SF	34	24.46	1.10
NF	45	32.37	0.87
NT	30	21.58	1.04
SJ	38	27.34	1.22
SP	26	18.71	0.95
NP	46	33.09	0.81"
NJ	29	20.86	1.21
TJ	34	24.46	1.28"
TP	26	18.71	0.87
FP	46	33.09	0.85
FJ	33	23.74	1.16
IN	29	20.86	0.92
EN	46	33.09	0.94
IS	23	16.55	0.92
ES	41	29.50	1.22

NOTE CONCERNING SYMBOLS FOLLOWING THE SELECTION RATIOS:
" IMPLIES SIGNIFICANCE AT THE .05 LEVEL. I.E.. CHI SQ. > 3.8;
IMPLIES SIGNIFICANCE AT THE .01 LEVEL. I.E.. CHI SQ. > 6.6;
* IMPLIES SIGNIFICANCE AT THE .001 LEVEL. I.E.. CHI SQ. > 10.8.
_ (UNDERSCORE) INDICATES FISHER'S EXACT PROBABILITY USED INSTEAD OF CHI-SQUARE.

BASE POPULATION USED IN CALCULATING SELECTION RATIO:
ALL FROSH STUDENTS
BASE TOTAL N = 361. SAMPLE AND BASE ARE DEPENDENT.

* * * * CALCULATED VALUES OF CHI SQUARE OR FISHER'S EXACT PROBABILITY * * * *

TYPE TABLE ORDER

1.45	0.12	1.45	0.01
0.12	0.93	2.30	0.21
0.01	3.18	2.29	0.00
1.56	0.17	0.11	1.34

E	1.03	IJ	2.39	SJ	3.12	IN	0.44
I	1.03	IP	6.20	SP	0.13	EN	0.43
		EP	0.21	NP	5.45	IS	0.33
S	1.44	EJ	2.90	NJ	2.16	ES	3.60
N	1.44						
		ST	0.38	TJ	4.18		
T	0.56	SF	0.69	TP	1.12		
F	0.56	NF	2.18	FP	3.08		
		NT	0.09	FJ	1.46		
J	6.97						
P	6.97						

Intuitive, Thinking, Judging). For females the ISTP (Introvert, Sensing, Thinking, Perceptive) and for males the ENFJ (Extravert, Intuitive, Feeling, Judging) are the least frequent types.

Examination of the distribution of the 4 preference scales reveals a much higher percentage of Perception than Judging in the total sample. The Self-selection Index indicates more female Extraverts and Feeling preferences than would be expected in comparison to distributions in the total sample. This Index also shows a higher number of male preferences for Introversion and Thinking than would be expected.

The table for voluntary withdrawals (Table 8) reveals that 7 of the original 15 ISTP's had voluntarily withdrawn from school. INFJ's had the second highest index, based on N = 361; 6 of the original 15 INFJ's had withdrawn. The lowest Index occurs for the ESFP's, where only 1 of the original sample's 19 ESFP's had withdrawn.

Table 9, Planning to Graduate from Rollins College, reveals a high Index for ESFP's, ENTJ's, ISTJ's and INFJ's. Lowest indices occur for ISTP's and INFP's. Only 3 of the original 15 ISTP's plan to graduate. The only one of the 4 preference scales which exhibits a proportional shift is the J-P scale, where a higher percentage of J's plan to graduate than would be expected, based on the sample.

Leisure Satisfaction Scale (LSS) Means

Table 10 presents the mean scores for each of the LSS subscales and for the total LSS, based on N=189 (those who completed the research packets). Table 10 also includes Ragheb's and Beard's norms for the LSS. Comparisons of means on the subscales reveal similar rankings of subscale scores. The Rollins sample had higher mean Educational and Social Subscale scores. The mean score, from a possible score of 120, on the Leisure Satisfaction Scale was 92.99. The highest mean was in the Relaxational Subscale and the lowest mean in the Physiological Subscale.

Differences in Leisure Satisfaction

Hypothesis 1

Hypothesis 1 states that there are no differences in leisure satisfaction between those students planning to persist to graduation and those students planning to leave prior to graduation. A series of t tests were run on the LSS subscales and total LSS scores for the two

TABLE 10
MEANS AND t TESTS LEISURE SATISFACTION SUBSCALES, MALE VS. FEMALE

LEISURE* SUBSCALE	MEAN BOTH SEXES	MEAN FEMALES	FEMALE ST. DEV.	MEAN MALES	MALE ST. DEV.	df	t
Psychological	15.64	15.58	2.64	15.71	2.70	176	-0.34
Educational	15.56	15.67	2.68	15.43	2.92	170	0.58
Social	15.85	16.45	2.49	15.10	2.77	168	3.49***
Relaxational	16.56	16.86	2.46	16.19	2.93	162	1.67
Physiological	14.59	14.18	3.80	15.10	3.06	186	-1.83
Aesthetic	14.79	14.85	2.63	14.73	2.50	181	0.32
Total Scores	92.99	93.58	11.00	92.25	12.40	167	0.44

* Note: Comparable norms from Ragheb and Beard (p. 339-340, 1980).

	Psychological	Educational	Social	Relaxational	Physiological	Aesthetic
Age (up to 25)	16.00	14.52	14.36	16.40	14.12	14.80
1-4 Years College	15.88	14.72	14.12	16.36	14.08	14.84

*** Significant at .001.

categories of enrollment. The "Two Sample t" for independent samples (unpaired data) was used in all cases unless otherwise stated. This is the most conservative statistic, since it does not assume equal population variances. Table 11 reports the results of these analyses. Although students who plan to stay until graduation had a higher mean score on the Psychological Satisfaction Subscale, there is no finding which reaches significance. Therefore, Hypothesis 1 cannot be rejected.

Hypothesis 2

Hypothesis 2 states that there are no differences in leisure satisfaction between male and female students, either in the total sample or when grouped by enrollment. A series of t tests were run for the LSS subscales and total LSS and for females versus males (Table 10). The highest satisfaction for both men and women was on the Relaxational Subscale. Women had significantly higher Social Satisfaction than men. Men had a higher mean on the Physiological Satisfaction Subscale, although not reaching the level of significance.

Comparisons were also made between females planning to leave before graduation and females planning to graduate from Rollins using the t test. The procedure was

TABLE 11
t TESTS, ENROLLMENT AND LEISURE

SUBSCALE	PLAN TO LEAVE N=51 MEAN	 STD DEV.	PLAN TO GRADUATE N=132 MEAN	 STD DEV.	DEGREES OF FREEDOM	t
Psychological	15.00	2.62	15.84	2.66	91	-1.94
Educational	15.16	2.66	15.73	2.87	97	-1.27
Social	15.26	2.61	16.05	2.71	93	-1.83
Relaxational	16.22	2.96	16.69	2.61	81	-1.00
Physiological	14.86	3.37	14.45	3.62	97	0.73
Aesthetic	14.53	2.59	14.99	2.58	90	-1.53
Total Score	90.82	12.4	93.74	11.5	85	-1.46

*Note: 6 students did not complete all items on the research packets and are not included here.

repeated for males in these two enrollment categories. No significant differences were found in male and female means of total LSS scores when grouped by enrollment status. Since only one subscale differed significantly by sex, Hypothesis 2 cannot be rejected.

Hypothesis 3

Hypothesis 3 states that there are no differences in leisure satisfaction between students living on campus and students living off campus, either in the total sample or when grouped by enrollment status. A series of t tests compared LSS subscale means for students living on campus and students living off campus (Table 12). The only significant difference was found on the Physiological subscale, where on-campus students had higher scores. An ANOVA was not applied to leisure satisfaction by the two factors of residence and enrollment status because of the very small size of the cells and the disparity in size between the day and boarding samples. Since only one subscale differed significantly by residence, Hypothesis 3 cannot be rejected.

TABLE 12
t TESTS, LEISURE SATISFACTION AND RESIDENCE
ON CAMPUS N=158, OFF CAMPUS N=31

	ON CAMPUS N=158		OFF CAMPUS N=31			
SUBSCALE	MEAN	STD DEV.	MEAN	STD DEV.	DEGREES OF FREEDOM	t
Psychological	15.65	2.70	15.61	2.49	45	0.05
Educational	15.56	2.87	15.58	2.32	49	-0.05
Social	15.87	2.72	15.71	2.60	43	0.32
Relaxational	16.49	2.87	16.90	1.54	78	-1.15
Physiological	14.89	3.47	13.07	3.37	43	2.74**
Aesthetic	14.82	2.63	14.68	2.24	47	0.31
Total Scores	93.27	12.1	91.55	8.83	54	0.93

** Signifcant at .01.

Hypothesis 4

Hypothesis 4 states that there are no differences in leisure satisfaction among the 16 MBTI types either in the total sample or when grouped by sex. One way analyses of variance (ANOVA) were used to compare means on LSS subscales by the 16 MBTI types (Table 13 and Table 14). The ANOVA were repeated for female students and for males (Appendix G). A series of *t* tests compared mean LSS subscale and total LSS scores for the 4 preference scales; i.e. Extraversion vs. Introversion; Sensing vs. Intuition; Thinking vs. Feeling; and Judgment vs. Perception (Table 15).

Psychological Satisfaction Subscale. There were significant differences among the types on the Psychological Subscale. The Sensing Judging combination had the highest means; the Feeling Perception the lowest means. When these differences were further explored by sex, findings were also significant for males (F ratio = 2.09), though not significant for females. The same MBTI types ranked highest and lowest as in the total sample.

Educational Satisfaction Subscale. Significant differences were found for the 16 types in the total sample,

TABLE 13

MEAN LSS SUBSCALE SCORES AND MBTI TYPES (BOTH SEXES)

MBTI TYPE	PSYCHOLOGICAL		EDUCATIONAL $\bar{X}$		SOCIAL $\bar{X}$		RELAXATION $\bar{X}$		PHYSIOLOGICAL $\bar{X}$		AESTHETIC $\bar{X}$		TOTAL SCORE $\bar{X}$	STD DEV.
	$\bar{X}$	STD DEV.	$\bar{X}$	STD DEV.	$\bar{X}$	STD DEV.	$\bar{X}$	STD DEV.	$\bar{X}$	STD DEV.	$\bar{X}$	STD DEV.		
ISTJ	17.45	1.75	16.82	1.83	15.36	2.77	16.27	2.28	15.36	3.47	14.82	2.79	96.1	9.8
ISFJ	17.14	2.85	17.86	2.27	16.86	2.34	16.14	4.22	14.29	5.02	16.86	2.54	99.1	15.2
INFJ	15.71	3.15	16.14	2.73	15.86	2.67	18.29	1.80	14.14	3.39	16.43	2.37	96.6	13.0
INTJ	17.00	2.06	16.11	1.17	15.56	3.78	16.89	3.06	13.56	4.50	15.00	2.06	94.1	8.9
ISTP	14.67	3.72	13.67	1.86	12.50	1.52	15.17	2.32	12.00	3.35	12.67	1.51	80.7	5.5
ISFP	14.40	2.12	13.60	3.20	14.80	2.39	15.50	2.76	14.40	2.88	13.90	2.60	86.6	12.8
INFP	13.73	2.84	14.67	3.02	14.80	2.78	16.60	2.92	13.07	2.84	14.40	2.72	87.3	11.6
INTP	16.44	3.17	14.56	3.97	15.67	2.29	15.44	4.33	15.11	2.85	14.33	2.24	91.6	10.5
ESTP	15.38	2.39	15.75	3.28	15.50	3.42	16.25	2.76	15.25	2.76	16.00	2.45	94.1	12.8
ESFP	15.27	2.52	15.73	2.66	16.13	2.64	16.47	2.61	14.80	3.53	14.20	2.34	92.6	12.9
ENFP	14.66	2.46	14.47	2.44	15.91	2.87	15.81	2.44	13.78	3.13	13.88	2.27	88.5	9.4
ENTP	16.00	2.08	16.07	3.27	14.79	2.75	16.57	2.71	15.86	3.35	15.07	2.81	94.4	11.8
ESTJ	16.87	2.90	16.87	2.90	17.80	1.78	18.27	2.12	16.20	3.30	16.13	2.83	102.1	10.9
ESFJ	16.90	2.64	16.30	1.70	16.60	1.65	15.90	1.97	15.40	2.99	15.10	2.81	96.2	10.3
ENFJ	16.00	2.28	15.82	2.86	17.55	1.92	18.82	1.08	14.55	5.84	15.27	2.76	98.0	11.8
ENTJ	15.20	1.69	16.40	1.78	16.30	1.77	16.90	1.66	15.50	2.59	14.80	2.04	95.1	5.6
	F Ratio=2.37*		F Ratio=2.07*		F Ratio=2.21*		F Ratio=1.78		F Ratio=1.07		F Ratio=1.75		F Ratio=2.59**	

Degrees of freedom = $\frac{15}{173}$

* Significant at .05.
** Significant at .01.

TABLE 14
ANOVA LEISURE SATISFACTION SUBSCALES AND MBTI (BOTH SEXES)

	df	ss	ms	F Ratio
Psychological Satisfaction				
Between Groups	15	227.37	15.16	2.37*
Within Groups	173	1106.16	6.39	
Total	188	1333.33		
Educational Satisfaction				
Between Groups	15	221.82	14.79	2.07*
Within Groups	173	1234.73	7.14	
Total	188	1456.55		
Social Satisfaction				
Between Groups	15	220.13	14.68	2.21*
Within Groups	173	1146.42	6.63	
Total	188	1366.55		
Relaxational Satisfaction				
Between Groups	15	182.13	12.14	1.78
Within Groups	173	1182.42	6.83	
Total	188	1364.55		
Physiological Satisfaction				
Between Groups	15	197.4	13.2	1.07
Within Groups	173	2122.4	12.3	
Total	188	2319.8		
Aesthetic Satisfaction				
Between Groups	15	163.67	10.91	1.75
Within Groups	173	1077.28	6.23	
Total	188	1240.95		
Total LSS Scores				
Between Groups	15	4663	311	2.59**
Within Groups	173	20765	120	
Total	188	25428		

* Significant at .05.
** Significant at .01.

TABLE 15
t TESTS, MBTI SCALES AND LSS SUBSCALES

MBTI Scale	LSS Subscale	N	Mean	St. Dev.	t
Introversion vs. Extraversion	Social Satisfaction	74	15.19	2.75	-2.70**
		115	16.27	2.58	
Thinking vs. Feeling	Psychological Satisfaction	82	16.26	2.52	2.86**
		107	15.17	2.69	
Judging vs. Perception	Psychological Satisfaction	80	16.56	2.45	4.305***
		109	14.96	2.62	
Judging vs. Perception	Educational Satisfaction	80	16.53	2.24	4.44***
		109	14.85	2.93	
Judging vs. Perception	Social Satisfaction	80	16.59	2.42	3.39***
		109	15.30	2.77	
Judging vs. Perception	Relaxational Satisfaction	80	17.26	2.46	3.19**
		109	16.05	2.75	
Judging vs. Perception	Aesthetic Satisfaction	80	15.50	2.57	3.30**
		109	14.28	2.46	
Judging vs. Perception	Total LSS Scores	80	97.46	10.6	4.84***
		109	89.7	11.3	

** Significant at .01.
*** Significant at .001.

but not when analyzed on the basis of sex. Again, Sensing Judging ranked highest, and Sensing Perception types ranked lowest. This pattern held for both sexes.

Social Satisfaction Subscale. Significant differences were found for the 16 types in the total sample but not for males and females. Extraversion Judging ranked highest, and Thinking Perception ranked lowest. Again, this pattern held when males and females were ranked.

Relaxational Satisfaction Subscale. Differences in means on this subscale were not significant in the total sample but were significant when an ANOVA was computed for females; the F ratio was 2.21. The pattern of highest and lowest mean scores for males and females was similar to that of the total. Intuition-Feeling-Judging scored highest and Introversion-Thinking-Perception lowest.

Physiological Satisfaction Subscale. No significant differences were found for the total sample or by sex. The Sensing Judging types scored highest, and the Introversion-Sensing-Perception types lowest.

Aesthetic Satisfaction Subscale. No significant differences were found for the total sample or by sex. In the total sample and for females the Introversion-Feeling-

Judging types had the highest means and the Introversion-Perception types the lowest means. For males, Sensing and Perception ranked lowest and Extraversion-Judging ranked highest.

Leisure Satisfaction Scale Totals. LSS total score means varied significantly by type. Analyses by sex, however, showed no significant differences. The ranking pattern of the types on the subscales is again revealed in the total scores; Sensing-Judging types ranking highest and Introversion-Sensing-Perception types ranking lowest.

Differences on the Four Preference Scales. Mean LSS Subscale and total scores were examined for differences on the 4 MBTI scales using the independent t tests; only tests reaching a level of significance are reported in Table 15. No significant differences occurred between Sensing and Intuition. Greatest differences between these two preferences were found on the Psychological Sat- isfaction Subscale. The Sensing mean was 16.07, and the Intuition mean was 15.31.

These statistics indicate that the hypothesis of no difference among MBTI types on leisure satisfaction can be rejected for specific types, preferences, and Leisure Subscales. Significant variation is, however, unrelated to gender differences.

Greek Affiliation and Leisure Satisfaction

Although not stated as an hypothesis, a check was made using the *t* test to compare Greeks and non-Greeks on the Psychological and Social Subscales and the LSS total scores. No significant differences were found, although Greeks had a 0.76 higher mean score on the Social Subscale.

MBTI Type and Enrollment - Hypothesis 5

Hypothesis 5 states that there are no differences among the 16 types in enrollment status either in the total sample or when grouped by sex. Contingency tables which allowed construction of a matrix of cells with expected and observed frequencies and compute a chi square were used to test this hypothesis. In addition, the SRTT Program, Selection Ratio Type Table, computed the ratio of percentage of type in a group to percentage in the sample, using the type table format (see Tables 8 and 9). Chi square could not be computed separately for males and for females by type and enrollment status because there were too many cells with expected frequencies of less than 5. Table 16 is the contingency table with chi squares for the 16 MBTI types by enrollment status (voluntary withdrawal, plan to leave before graduation, plan to graduate). The total chi square does not reach significance.

In Table 16, the cell with the highest chi square is that of the ESFP. It may be noted that although 5.5 cases were expected to withdraw, only 1 did. Another way of viewing these data is the SRTT tables. Here the Self-selection Index ("I") is 0.20 for ESFP, meaning that this type is dramatically underrepresented among voluntary withdrawals. The Base Population Type Table shows that there were 19 ESFP's in the base sample (N=361). Types overrepresented among the voluntary withdrawals are ISTP, INFJ, ISFP, and ENTP, all significant at the 0.001 level. The SRTT for those planning to graduate supports trends shown in the table for voluntary withdrawals. For example, the Index for ESFP is 1.50. Other types overrepresented are ENTJ, INFJ, and ISTJ. Underrepresented are several types with the I and P preferences. Types with a J preference are most likely to plan to graduate. Table 17 summarizes enrollment status by the 16 MBTI types.

TABLE 16
ENROLLMENT STATUS BY MBTI TYPE (BOTH SEXES)

	1 Voluntary Withdrawal	2 Plan To Leave	3 Plan to Graduate	Totals
1 ISTJ	1 3.6	2 2.1	8 5.3	11
2 ISFJ	5 3.9	1 2.3	6 5.8	12
3 INFJ	6 4.5	0 2.7	8 6.8	14
4 INTJ	5 4.2	2 2.5	6 6.3	13
5 ISTP	7 4.2	3 2.5	3 6.3	13
6 ISFP	7 5.5	4 3.2	6 8.3	17
7 INFP	8 8.1	8 4.8	9 12.2	25
8 INTP	3 3.6	2 2.1	6 5.3	11
9 ESTP	4 3.9	2 2.3	6 5.8	12
10 ESFP	1 5.5	5 3.2	11 8.3	17
11 ENFP	16 15.2	11 9.0	20 22.8	47
12 ENTP	10 8.4	5 5.0	11 12.6	26
13 ESTJ	6 6.8	2 4.0	13 10.2	21
14 ESFJ	7 6.8	2 4.0	12 10.2	21
15 ENFJ	5 5.2	3 3.1	8 7.8	16
16 ENTJ	2 3.9	3 2.3	7 5.8	12
TOTALS	93	55	140	288

TOTAL CHI SQUARE = 27.45

Note: Cells contain observed over expected frequencies.

TABLE 17
ENROLLMENT STATUS FOR 16 MBTI TYPES

	No. in Original Sample	No. Voluntary Withdrawals	Plan to Persist	
			No.	% of Original Sample
ISTJ	15	1	8	53
ISFJ	14	5	6	43
INFJ	15	6	8	53
INTJ	15	5	6	40
ISTP	15	7	3	20
ISFP	21	7	6	29
INFP	34	8	9	26
INTP	18	3	6	33
ESTP	16	4	6	38
ESFP	19	1	11	58
ENFP	66	16	20	30
ENTP	29	10	11	38
ESTJ	26	6	13	50
ESFJ	26	7	11	42
ENFJ	19	5	8	42
ENTJ	13	2	7	54

Note: Not all subjects from the original sample indicated their plans to leave or persist.

Hypothesis 5 cannot be rejected when factoring by sex because many of the contingency table cells were too small. However, the hypothesis can be rejected for MBTI types, such as the ESFP.

Grade Point Average and MBTI Type - Hypothesis 6

Hypothesis 6 states that there are no differences among the 16 types in grade point average (GPA) either in the total sample or when grouped by sex. ANOVA's were performed on the total sample and for men and women comparing mean grade point average for each type. Differences were also explored using the *t* test for the 4 preference scales. ANOVA did not reveal any significant differences, in the total sample or when grouped by sex. Table 18 reports the ANOVA for the total sample. The highest GPA was associated with the INFJ, followed by the INTJ. Lowest GPA occurred with the ISFP and ENTP. Similar patterns occurred when grouped by sex, with the exception that female ISTP's had the lowest GPA.

The Judging-Perception scale was the only one of the 4 preference scales with significant differences in GPA (t=2.45). The Judging preference had a mean GPA of 8.20, and the Perception preference a mean of 7.55 (Table 19).

TABLE 18
ANOVA FOR MBTI AND GPA

	DF	SS	MS = SS/DF	F Ratio
Factor	15	63.39	4.23	1.63
Error	173	447.48	2.59	
Total	188	510.87		

Type	N	*GPA Mean	St. Dev.
ISTJ	11	8.15	2.03
ISFJ	7	8.54	1.56
INFJ	7	9.37	1.39
INTJ	9	9.22	1.74
ISTP	6	7.11	2.23
ISFP	10	6.91	1.16
INFP	15	7.77	1.53
INTP	8	8.02	1.59
ESTP	8	7.82	1.52
ESFP	15	8.06	1.76
ENFP	32	7.76	1.33
ENTP	15	6.98	0.94
ESTJ	14	8.09	1.52
ESFJ	11	8.05	1.34
ENFJ	11	7.85	1.84
ENTJ	10	8.12	2.56

*Note: GPA is calculated

A = 12
A- = 11
B+ = 10
B = 9
B- = 8
C+ = 7
C = 6
C- = 5
D+ = 4
D = 3
D- = 2

Although trends in the data indicated the INJ combination as more likely to have a higher GPA, the only MBTI personality factor of significance was the Judging preference. Therefore, Hypothesis 6 cannot be rejected.

Grade Point Average and Enrollment

No specific hypothesis was tested, but a check was done on possible differences in grade point average between voluntary withdrawals and students planning to persist to graduation. The *t* test was significant. This difference should be viewed with caution, since the variable of number of semesters enrolled was not controlled. Voluntary withdrawals frequently had fewer terms to build up their averages. Also it may be noted that the standard deviation of the voluntary withdrawals was large.

TABLE 19
t TESTS, MBTI SCALES AND GPA

Extraversion vs. Introversion	*t*= 0.96 (df = 144)
Sensing vs. Intuition	*t*= -0.39 (df = 183)
Thinking vs. Feeling	*t*= -0.69 (df = 141)
Judging vs. Perception	*t*= 2.45 (df = 158)

Other Factor Comparisons of Enrollment

A 2x3 contingency table (Table 20) was constructed for enrollment status and Greek, non-Greek affiliation. The resulting chi square was significant, indicating

Greek affiliated students were much less likely to voluntarily withdraw than expected and more likely to persist.

TABLE 20
ENROLLMENT STATUS BY GREEK AFFILIATION
(Observed over expected frequencies)

	Greek	Non-Greek	Totals
Withdrawal	15 38.1	77 54.6	93
Plan to leave	24 22.5	31 32.3	55
Plan to graduate	79 57.4	61 82.2	140
Totals	118	169	288

Chi Square = 36.99

*The remaining subjects (N=74) of the sample base declined to complete this section of the research packet.

A 2x3 contingency table was constructed to ascertain differences between expected and observed frequencies for males and females by enrollment status (Table 21). No significant differences were found.

TABLE 21
ENROLLMENT STATUS BY SEX
(Observed over expected frequencies)

	Females	Males	Totals
Voluntary withdrawal	46 49.1	47 43.9	93
Plan to leave	32 29.0	23 26.0	55
Plan to graduate	74 73.9	66 66.1	140
Totals	152	136	288

Chi Square = 1.05

A third contingency table was constructed to compare enrollment status for boarding and day students. The chi square of 5.10 did not reach the .05 level significance.

TABLE 22
ENROLLMENT STATUS BY RESIDENCE
(Observed over expected frequencies)

	Boarding	Day	Totals
Voluntary withdrawal	73 77.2	20 15.8	93
Plan to leave	51 45.6	4 9.4	55
Plan to graduate	115 116.2	25 23.8	140
Totals	239	49	288

Chi Square = 5.10

Correlations

Table 23 is a correlation matrix of Leisure Satisfaction Subscales and grade point average. Although several of the subscales were intercorrelated, there was very little correlation of GPA with these subscales. The highest intercorrelation existed between the Psychological and Educational Subscales.

Multiple regression of grade point average by the 6 Leisure Satisfaction Subscales for the sample N=189, and for males and females, yielded a very low R2 of 5.8% for females, 1.8% for males, and 2.1% for total sample (percentage of variance explained by these factors). Therefore, no predictive value can be attributed to the LSS by using this statistical method.

Leisure Activities

Results of the question, "Please list the 3 activities you most like to do in your leisure time at Rollins College", which was used as a check on leisure perception and for general interest, are included in Appendix E. This table summarizes the most frequently mentioned leisure activities by MBTI type. Appendix E identifies most frequently mentioned leisure activities when the sample was divided into two groups: low subscale scores on the LSS (below 12) and high scores on the LSS (above 17).

TABLE 23
CORRELATION MATRIX
LSS SUBSCALES AND GPA

Both Sexes	Psychological	Educational	Social	Relaxational	Physiological	Aesthetic
Educational	0.575**					
Social	0.312**	0.420**				
Relaxational	0.376**	0.265**	0.450**			
Physiological	0.389**	0.309**	0.183*	0.338**		
Aesthetic	0.429**	0.482**	0.304**	0.246**	0.371**	
GPA	0.172*	0.118	0.163*	0.091	0.032	0.153*
Females						
Educational	0.610**					
Social	0.238**	0.375**				
Relaxational	0.272**	0.199**	0.325**			
Physiological	0.313**	0.279**	0.157*	0.299**		
Aesthetic	0.491**	0.515**	0.372**	0.256**	0.320**	
GPA	0.253**	0.109	0.149*	0.211**	0.093	0.240**
Males						
Educational	0.539**					
Social	0.443**	0.469**				
Relaxational	0.509**	0.324**	0.557**			
Physiological	0.515**	0.384**	0.318**	0.444**		
Aesthetic	0.358**	0.439**	0.203**	0.223*	0.487**	
GPA	0.073	0.116	0.131	-0.082	-0.029	0.029

* Significant at .05.
** Significant at .01.

Students with lower subscale scores often did not list three activities as requested or listed items such as "sex", "drinking", and "sleeping". The general category "sports" and specific sports were the most frequently named leisure activities. Sports were most closely related to higher scores on the Relaxational Subscale. Other frequently mentioned leisure activities were visiting friends and reading. Greek activities were not frequently mentioned.

Academic Dismissals

Although not part of the study, a table of academic dismissals from the original sample can be found in Appendix D. Dismissals are grouped by MBTI type and sex.

These data on factors relating to leisure satisfaction, enrollment status, grade point average, and personality are interpreted and their implications discussed in the next chapter.

CHAPTER V

DISCUSSION

Findings from this study of leisure satisfaction, personality type, and enrollment status at Rollins College can be generalized to other four year liberal arts colleges. As stated earlier, the MBTI distribution in the sample is similar to other institutions of this type. However, because leisure interests and leisure satisfactions can vary according to age (Murphy, 1975; Ragheb and Beard, 1980), the results can be generalized only to college populations of young adults. For example, Ragheb and Beard found similar rankings of subscale scores for the "up to 25" student population as found in this study. Correlations among the subscales reported by Ragheb and Beard also are consistent with correlations found in this study.

The external validity of this study was weakened somewhat by the sampling procedure. The 79 students who did not complete the research packets might have reported lower leisure satisfaction and might have been unwilling to disclose plans to leave prior to graduation. It may also have been that these 79 students were frustrated over concomitant registration procedures, and that situation contributed to their non-response. GPA and other factor data were not obtained on this group because of the difficulties involved and because representativeness through factor comparisons would not have eliminated speculations concerning non-response. This speculation is, however, offset by the fact that the 71% response to the research procedures included representative numbers of all variables.

Findings in relation to grade point average were consistent with those of Bourg (1979) and others cited earlier. For example, the Judging types had significantly higher GPA's than the Perceptive types. Also, Intuitive-Judging types in both studies ranked higher than other types in their GPA's.

Evaluation of Hypotheses

The following hypotheses could not be rejected:

-Hypothesis 1--There are no differences in leisure satisfaction between those students planning to leave prior to graduation and those planning to persist until graduation.

-Hypothesis 2--There are no differences in leisure satisfaction between male and female students either in the total sample or when grouped by enrollment status.

-Hypothesis 3--There are no differences in leisure satisfaction between students living on campus and students living off campus either in the total sample or when grouped by enrollment status.

-Hypothesis 6--There are no differences among the 16 MBTI types in grade point average either in the total sample or when grouped by sex.

The following hypotheses were rejected:

-Hypothesis 4--There are no differences in leisure satisfaction among the 16 MBTI types either in the total sample or when grouped by sex.

-Hypothesis 5--There are no differences among the 16 types in enrollment status either in the total sample or when grouped by sex.

The factors most related were personality type with enrollment and personality type with leisure satisfaction. There appears to be no direct link between leisure satisfaction and college persistence, yet there is an association among these three factors. For example, there were more ISTJ's (Introversion, Sensing, Thinking, Judging) persisting than would be expected, and ISTJ's scored higher than many other types on the Leisure Satisfaction Scale. Yet Hypothesis 1 was not rejected. Perhaps some types, such as the ISTJ, have a cluster of characteristics that, among other things, are conducive to persistence and to seeking out and obtaining leisure satisfaction.

The results of the data analyses suggest that a general profile of the voluntary withdrawal and the persister can be postulated. The voluntary withdrawal is more likely to be an Introvert-Perceptive, be non-Greek, and have a lower GPA. The persister is more likely to be Judging, or an ESFP, Greek, and have a higher GPA.

Factors not found significant in relation to attrition or persistence were sex, residence, and degree of leisure satisfaction.

Interpretations

Personality Factors in Hypotheses 4, 5, and 6

Certain patterns for MBTI types and preference scales can be seen from the data. Differences in types were statistically significant for leisure satisfaction, enrollment status, and grade point average. The most prominent MBTI patterns are interpreted here in relation to type theory and implications.

Judging types (J) were significantly higher than those with the opposite preference, Perception (P), in GPA, leisure satisfaction, and college persistence. Type theory postulates that Judging types will tend to be more organized and more persistent in following through on goals and plans (both academically and socially). Individuals preferring Perception are more likely to change plans, not set distinct goals, or not persist in the face of obstacles.

Sensing in combination with Judging scored higher than other types on the Psychological and Educational Satisfaction Subscales and on total LSS scores. The SJ types also tended to have a higher percentage of college persisters. Sensing types, especially in combination with Judging, tend to be more task and result "minded" than the Intuitives, who may do more questioning about the value of college and may experiment more with alternative life styles or possibilities. Sensing types place importance on enjoyment of every day activities, whereas Intuitives tend to be more "future" focused, often deferring immediate plesures. Sensing may be more conducive to assessment and utilization of the leisure resources immediately available in the environment. On the other hand, it could be proposed that Sensing types had higher LSS scores because they are more easily satisfied than Intuitives. Intuitives tend to set high expectations, be concerned about boredom, and view their surroundings in more abstract and complex terms. It would be expected that Intuitives would be more compatible with a liberal arts educational goal and thus more likely to persist than Sensing types, who tend to value learning of a more practical or applied nature. In explaining behavior, the preference scales often cannot be viewed separately, and in this case it appears that the Judging preference may be influencing the Sensing towards persistence.

The Extravert Judging types scored highest on Social Satisfaction, and the Thinking Perceptive types scored lowest, followed by the Introvert Perceptives. Extraverts tend to be more action oriented than Introverts, focusing outside themselves, and Judging types are more likely to plan activities than Perceptive types.

The Introvert Perceptive types were more likely to withdraw and ranked low on many of the LSS subscales. They may be more prone to leave college because of a more inward, possibly passive, style in dealing with their environments. The IP's favor the preference or function with which they make decisions and on which they base their actions (Thinking or Feeling). If these students have not developed or exercised this function, they may have difficulty using leisure time satisfactorily, organizing themselves academically, or making decisions independent of their parents. Withdrawing for these students, then, may be a result of dissatisfaction with college life and lack of social and academic integration.

Of the 16 MBTI types, the ESFP's had the highest rate of persistence. This finding is surprising if viewed only in light of type theory. Type theory suggests some tendencies: fun-loving, energetic, sociable, sports-minded, valuing performance (athletic, musical, etc.), flexible, spontaneous, practical-minded, congenial. The question can be raised as to whether these characteristics "fit" with the Rollins College environment, using Astin's (1964) conceptualization of "fit." In past years, these characteristics were often cited as those of the "typical Rollins student", especially the active, Greek-affiliated, athletic student. The environment provides for support of sports interests and a social system compatible to these ESFP characteristics.

Student Leisure in Hypotheses 1, 2, and 3

Scores were consistently highest on the Relaxational Subscale for all factored groups (by sex, residence, type, enrollment). This finding supports statements by other leisure researchers such as Ragheb, Beard, and Murphy. Relaxational leisure is primarily meeting the need for stress reduction. Stress and academic anxieties are major problem areas for college students. The personal counseling caseload at Rollins College reflects this; a large number of stress related problems are presented by students.

The most frequently listed leisure activities associated with Relaxational Satisfaction were sports and outdoor activities. These same activities for an older age group could be pursued for Physiological or some other satisfaction. The Physiological Subscale ranked lower than many of the other subscales probably because young adults are not yet as concerned with maintaining health, weight, etc., as an older group. Students value "getting my mind off academic worries" and "just unwinding."

The Rollins College environment is conducive to Relaxational Satisfaction with its outdoor, physically active culture. There are sports and facilities readily available, as reflected in students' listings of activities most favored in their leisure. In view of the results of this study, there is probably a need for additional facilities.

In regard to the social/affiliative nature of leisure, Murphy and others have postulated that students prefer to engage in activities of non-intellectual, social quality. The Social Subscale was high for most groups. Frequently listed preferred activities reflected this subscale: "talking with friends", "visiting friends", "going to parties", team sports, and group physical activities. It is surprising that Social Satisfaction is as high as it is for female students, given the college's recent history of frequent female criticism of the "social atmosphere." Also, the leisure literature indicates a tendency for females to have lower social or affiliative satisfaction and for differences in leisure patterns (as well as attrition patterns) to occur by sex.

It is also surprising that no significant differences were found in leisure satisfaction between resident and commuter students. The usual concerns for integrating commuters into college life are not reflected in their LSS scores. The college has made a concerted effort to involve commuters in the past few years, and this effort may be reflected here.

In examining the correlations among the 6 leisure subscales and GPA, it cannot be said that students' grades suffer from too little or too much leisure satisfaction. Leisure satisfaction has not been found significant in relation to GPA and attrition. There may be too many other variables not controlled in this study for the effects of leisure satisfaction to be observed. The leisure satisfaction of the voluntary withdrawals was not obtained, and so the question remains: "Was their leisure satisfaction low just prior to their decision to withdraw?" This study does not answer this question, nor speculate on the answer.

The concept of leisure satisfaction seems to be a useful one for grasping dimensions not covered by leisure "interests" and activities. Satisfaction differentiates motivators and personal outcomes from the leisure activity per se. For example, activities listed by research subjects were primarily engaged in for relaxational satisfaction, whereas many of these activities in an older age group might be sought for physiological satisfaction. One difficulty with this concept, however, is interpreting a low satisfaction score. Without additional information it is difficult to ascertain if the individual was lacking in some way (unmet needs) or whether that particular subscale had no importance at that developmental stage or for that personality.

The LSS subscales, Psychological and Educational, probably need more differentiation and redefining. There is a strong correlation between the two subscales (Rollins r=0.58; Ragheb and Beard, 1980 r=0.59). Ragheb's and Beard's description of the Psychological Subscale would lead to prediction of higher scores by Intuitives and Thinking types (sense of "intellectual challenge") and Perceptives (sense of "freedom"). Yet scores were highest for the SJ's, and the LSS questions for this scale are likely to attract SJ responses. Similar observations can be made about the Educational Subscale, which is described as providing "intellectual stimulation", more likely to appeal to N's. The questions for this subscale, however, deal with learning about people and surroundings, and could appeal to SJ's.

Greek Affiliation

The statistical significance of Greek affiliation and college persistence may be explained by drawing from Tinto's (1975) theory that social integration contributes to persistence. The student involved with a group that has a strong identity may feel a sense of belonging and involvement generally not present to that degree among students living in large dormitories. Other organizations not identified in this study might also significantly influence persistence by fostering social integration.

Implications

For Theory

It can be seen that student dropout behaviors are a complex of factors. Personality is an important factor and yet is difficult to measure directly. That which can be measured, e.g., the MBTI types, is still subject to great variation within the types, and it is difficult to control the influence of external factors.

Type theory concerning the preferences, values, and behaviors of MBTI types has been validated and furthered in this study, particularly through the data on leisure satisfaction. Introvert-Perceptive types generally had lower leisure satisfactions and were not as persistent in college. In addition to the characteristics cited earlier to explain these findings, there may be a more basic, underlying dynamic here. The IP combination has as the dominant or favored function the preference scale dealing with making decisions and evaluating conditions upon which to base actions (Thinking or Feeling). Yet with Introverts, this dominant function (Thinking or Feeling) is internalized and not shown to the outer world. The Introverts, then, use their secondary or second-favored function (either Sensing or Intuition) to deal with the world around them. Thus, the IP may actually first develop the secondary function through a need to deal with the world and neglect the dominant function. In counseling situations, the writer has frequently found IP college students unable to utilize the decision making function. These students frequently have no idea how to engage their own values and evaluative modes. If this is the case, a very important personal skill, evaluative Thinking or Feeling, is crippled. These students in effect are handicapped or perhaps immobilized in their actions. This condition would certainly impact leisure satisfaction, adjustment to social and academic aspects of college, and dropout behaviors.

Findings of the Leisure Satisfaction Scale (LSS) strengthen those which Ragheb and Beard obtained in developing the instrument. The importance of various types of leisure satisfaction to the young adult college student population is clearly shown in this study and confirms earlier assertions of researchers such as Murphy, Ragheb, and Beard. The factors of age and student status seem more crucial to the pattern of leisure satisfaction than other factors such as sex and residence. Also, the MBTI data provide some concurrent validity to the LSS subscales, with the exception of the somewhat undefined Psychological and Educational Subscales. For example, the EJ's were higher on the Social Subscale, meaning they were satisfied by rewarding relationships with other people. This finding is compatible with characteristics described earlier for EJ's.

For Research

Many new questions have been stimulated by this study. A researcher with computer and statistical capabilities could build a complex predictive model that included leisure satisfaction, campus and off-campus activities, MBTI types, and intellective factors such as SAT scores. Path analysis might be a useful approach in this regard.

Several studies should be done to investigate needs and decision making processes of the Introvert-Perceptive types, after identifying them by testing during orientation. Some instrument that measures decision making ability could be used to compare differences within this group and among other groupings by MBTI type. This instrument would be administered again sometime in the sophomore year. These measurements could be studied in relation to attrition, GPA, leisure satisfaction, and other relevant factors. If significant differences were found in decision making, various types of workshops or "treatments" could be designed to assist these students in developing their evaluative processes (Thinking or Feeling). The effectiveness of treatments could then be evaluated through research.

Another useful research approach would be the case and field study designs which would target all individuals within a particular type, such as the ESFP's or ISTP's. At several points in their college careers, measurements could be taken: e.g., the LSS, retest with the MBTI, and/or activities inventory. Withdrawal decisions and student development in general involve ongoing processes which this type of study might be able to describe more fully than through some other research design.

Certainly the basic approach of this study should be repeated for several years at Rollins College to establish whether the relationship of MBTI personality factors to enrollment status is a consistent and significant pattern.

The three leisure areas which seemed most important in this study and should, therefore, be researched more thoroughly in the college setting are

- Leisure for relaxational and stress management
- Leisure for social, interpersonal development
- Leisure for psychological satisfaction and self-concept development

Other instruments may be developed to measure these specific areas in college students. The relationship of these leisure areas to attrition, extracurricular activities, grades, etc., should be explored. Membership in other types of affiliative organizations, other than Greek, can be examined for possible relationship to persistence in college.

In addition, more work needs to be done to differentiate the LSS Psychological and Educational Subscales. Further studies to demonstrate concurrent validity seem in order.

For Training

The results of this study suggest that counselor education programs should emphasize a holistic approach in working with college students. Training in comprehensive assessment should include methods of evaluating students' use of leisure; e.g., whether leisure time is being used effectively and satisfactorily, particularly to meet needs for relaxation, social contact, and self-concept. Formal training in leisure counseling would be valuable to counselors and student personnel workers. They should learn to assist students in evaluating their present situation (work/play balance) and personal needs. Leisure counseling approaches facilitate individuals making decisions and plans and pursuing options to fulfill their needs.

If MBTI type theory is utilized as one framework for viewing student development, then counselors need to be trained in methods to assist students to access potential strengths, indicated by the MBTI, and to develop those functions further. For example, counselors can be trained to identify and work with students who do not know how to access and utilize their decisional capabilities. Intervention involves more than teaching the traditional "steps of decision making" or "problem-solving" in a cognitive mode; training and intervention should involve the affective and intrapsychic dimensions as well.

All student personnel workers in housing, counseling, etc., should be trained to conduct needs assessments and to evaluate particular college environments in relation to these needs and extracurricular programs. Such research capabilities should be strongly encouraged in order to foster effective living/learning environments.

Also if repeated studies do confirm that particular personality characteristics comprise a "fit" with college environments, then admissions counselors need to be specifically trained to identify these characteristics in applicants during recruitment processes.

For Practice

As mentioned in the discussion of training, counselor assessment and intervention should be holistic. Use of leisure, balance between academics and play, level of stress, and social integration should be considered by the counselor working with college students.

Knowledge of students' MBTI types may alert counselors to potential areas of difficulty in college adjustment. These areas can be explored and interventions carried out where needed and appropriate. For example, Intuitives can be assisted through counseling to become more aware of the "here and now" in terms of their leisure needs and leisure resources. Through counseling they may achieve more of a balance between futuristic orientation and present attention to personal needs. Perceptive types, especially the Introvert Perceptives, can be identified early and offered workshops in time management, study skills, and dealing with procrastination. It must not be assumed that every IP student needs these workshops. However, some form of outreach may help students who tend to be more passive so that they become involved with these services. The questions can be asked: "Do IP students need or desire more direction in use of leisure and should they be offered leisure counseling?" Counselors should then act on the responses.

Student personnel workers should encourage availability of multiple and varied leisure resources that meet student needs, especially for relaxational and social leisure. Need for diversity is indicated by the leisure activities students listed in this study and by personality differences. Membership in strongly affiliative organizations should be encouraged as a deterrent to attrition.

If certain personality characteristics continue to be related to persistence and withdrawal, student personnel workers may wish to stimulate an institutional dialogue on the questions, "Is this the type of student we wish to attract and keep? Do we want to consider changing the institution and its environment in ways that will encourage withdrawing students to stay?"

Recommendations

The discussion and implications of this study lend themselves to the following recommendations:

1. There should be an increase in the number and variety of opportunities for relaxational leisure, and more outdoor recreational facilities and activities should be developed. For example, racquetball courts would be well-used, as indicated by expressed student interests and leisure satisfaction. More informal athletic activities and intramurals should also be provided.
2. Social leisure should be enhanced through more informal gathering places for students to visit friends, and a variety of socializing activities should be planned.
3. Housing staff and other student personnel workers should be trained for leisure assessment, programming, and counseling.
4. Colleges should support existing residential, social organizations as possible deterrents to attrition and foster development of alternative types of social/learning residential organizations.

5. Research should be continued in relation to personality type and attrition.

6. Certain students, such as Introvert Peceptive types, should be offered specific programs to facilitate social and academic integration and college adjustment.

Summary

This longitudinal study has followed an entering freshman class through mid-sophomore year to explore the relationships of attrition, personality, and leisure. Other factors such as sex, residence, Greek affiliation, and grade point average were also considered. Some data analyses were significant for personality type and enrollment status and for personality type and leisure satisfaction. Several factors were related to higher grade point averages. Other factors were not significant in relation to attrition. It appears, therefore, that attrition is a complex of variables. While this study yielded some tentative patterns, additional research is needed to confirm them.

This study has also pointed to some implications for counselor and student personnel practice in the college setting and to directions for additional research. Specific institutional recommendations have been generated.

Further, more knowledge has been gained about MBTI types and leisure satisfaction in college students. When these findings are combined with those of subsequent investigations, substantive guidelines for the counseling and student personnel professions should emerge.

APPENDIX A
LETTER OF PERMISSION TO USE THE LSS

College of Education
Department of Human
Services and Studies

The Florida State University
Tallahassee, Florida 32306

April 8, 1981

Miss Judith A. Provost
Personal Development Counselor
Career Planning and Placement Counseling
Rollins College
Box 2587
Winter Park, FL 32789

Dear Miss Provost:

I was pleased to receive your letter dated April 3, 1981 requesting a permission to use the short form of the Leisure Satisfaction Scale (LSS). Dr. Beard and I would welcome very much your usage of that scale and you have our approval and permission.

We maintain copyright to ensure that researchers will use the scale in a consistent manner. There are two points which we always request: (1) Please use the short form as it is, without any changes in the scale or items, (2) We need to obtain a copy of your results with emphasis on how reliable the LSS will be in your study. This is to compare it to other studies and to gain insights on how the LSS is functioning.

Enclosed are a copy of the LSS, its report, a copy of the leisure attitudes scale and its report, and a copy of the answer sheet which we used. If you have any further questions please do not hesitate to call.

Thank you very much for your interest.

Sincerely yours,

Mounir G. Ragheb, Ph.D.
Assistant Professor
Leisure Services and Studies

MGR/zn/W-16

Enclosures

cc: Dr. Jacob Beard

APPENDIX B
RESEARCH PACKET

Dear Member of the Class of 1984,

The college would appreciate your help to learn more about why students leave or stay at Rollins. A better understanding of how students feel about their leisure, as well as the information from the Myers-Briggs Indicator taken during Freshman Week and the questions on this form, can help us plan for a more satisfying and stimulating college environment. Your name will not be used. This information will be used only for studying patterns among students, without identifying specific students.

Please complete this form and the brief accompanying Leisure Satisfaction Scale if you are willing to help with this research project. If you have any questions about the project or the results, contact Judy Provost, Personal Development Counselor. Thank you for your help!

Judy Provost

PLEASE CHECK ALL THOSE STATEMENTS THAT APPLY TO YOU:

SEX: ____ male ____ female

____ member of fraternity or sorority

RESIDENCE: ____ live on campus ____ live off campus

FUTURE PLANS FOR ATTENDING ROLLINS COLLEGE:

____ I plan to complete undergraduate work at Rollins.

____ I plan to leave at the end of this term.

____ I plan to leave Rollins before completing undergraduate work.

PLEASE LIST THE 3 ACTIVITIES YOU MOST LIKE TO DO IN YOUR LEISURE TIME AT ROLLINS COLLEGE:

1.

2.

3.

NOW PLEASE TURN TO THE NEXT PAGE AND COMPLETE THE LEISURE SATISFACTION SCALE, AS THESE STATEMENTS APPLY TO YOUR LEISURE DURING THE SCHOOL YEAR.

____
print name, Social Security number

Leisure Satisfaction Scale

DIRECTIONS: Below are some statements on how persons feel about and perceive their leisure activities. Leisure activities are defined as non-work activities in which the individual has a free choice with no obligation. Activities can be active or inactive; such as sports, outdoor, activities, social activities, watching TV, reading, or doing nothing. Read each statement and then blacken the appropriate circle on the enclosed answer sheet. If the statement is ALMOST NEVER TRUE, circle "1", if the statement is ALMOST ALWAYS TRUE, circle "5", if you are in between, circle the number which describes how true the statement is for you. There are no right or wrong answers.

Almost Never True	Seldom True	Sometimes True	Often True	Almost Always True
1	2	3	4	5

1. My leisure activities are very interesting to me.
2. My leisure activities give me self-confidence.
3. My leisure activities give me a sense of accomplishment.
4. I use many different skills and abilities in my leisure activities
5. My leisure activities increase my knowledge about things around me.
6. My leisure activities provide opportunities to try new things.
7. My leisure activities help me to learn about myself.
8. My leisure activities help me to learn about other people.
9. I have social interaction with others through leisure activities.
10. My leisure activities have helped me to develop close relationships with others.
11. The people I meet in my leisure activities are friendly.
12. I associate with people in my free time who enjoy doing leisure activities a great deal.
13. My leisure activities help me to relax.
14. My leisure activities help relieve stress.
15. My leisure activities contribute to my emotional well being.
16. I engage in leisure activities simply because I like doing them.
17. My leisure activities are physically challenging.
18. I do leisure activities which develop my physical fitness.
19. I do leisure activities which restore me physically.
20. My leisure activities help me to stay healthy.
21. The areas or places where I engage in my leisure activities are fresh and clean.
22. The areas or places where I engage in my leisure activities are interesting.
23. The areas or places where I engage in my leisure activities are beautiful.
24. The areas or places where I engage in my leisure activities are well designed.

MR/eg/W-5

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ANSWER SHEET

LEISURE SATISFACTION SCALE

Almost Never True	Seldom True	Sometimes True	Often True	Almost Always True
1	2	3	4	5

	1	2	3	4	5
1.	0	0	0	0	0
2.	0	0	0	0	0
3.	0	0	0	0	0
4.	0	0	0	0	0
5.	0	0	0	0	0
6.	0	0	0	0	0
7.	0	0	0	0	0
8.	0	0	0	0	0
9.	0	0	0	0	0
10.	0	0	0	0	0
11.	0	0	0	0	0
12.	0	0	0	0	0
13.	0	0	0	0	0
14.	0	0	0	0	0
15.	0	0	0	0	0
16.	0	0	0	0	0
17.	0	0	0	0	0
18.	0	0	0	0	0
19.	0	0	0	0	0
20.	0	0	0	0	0
21.	0	0	0	0	0
22.	0	0	0	0	0
23.	0	0	0	0	0
24.	0	0	0	0	0

____

Print name   Social Security Number

APPENDIX C
LETTER OF FOLLOW-UP TO STUDY SUBJECTS

ROLLINS COLLEGE
founded 1885

Dean of the College
Carnegie Hall

December 11, 1981

DEAR MEMBER OF THE CLASS OF 1984:

We are doing a research study of your entire class, to learn more about why students leave Rollins or stay the four years. Can you please help by taking 10 minutes to complete this questionnaire?

Your name will not be used in the study but is only necessary to identify your Myers-Briggs type results, (taken last year).

Return to Box 2345
Office of the Dean of the College

Thank you,

Roland J. B. Goddu
Dean of the College

RG/mn

Campus Box 2345 • Winter Park, Florida 32789 • (305) 646-2345
An Equal Opportunity / Affirmative Action College

APPENDIX D
ACADEMIC DISMISSALS
(FROM THE CLASS OF 1984)

	Male	Female
ISTJ	2	-
ISFJ	-	-
INFJ	1	-
INTJ	-	-
ISTP	1	-
ISFP	-	-
INFP	-	3
INTP	-	-
ESTP	5	2
ESFP	-	1
ENFP	1	2
ENTP	1	1
ESTJ	-	-
ESFJ	1	-
ENFJ	1	-
ENTJ	1	-
Total	14	9

APPENDIX E
MOST FREQUENTLY NAMED ACTIVITIES BY TYPE

ISTJ	ISFJ	INFJ	INTJ
Sports	Read	Sports	Friends
Film	Sports	*Play Piano	Jog
	Friends		*Writing
	*Volunteer		

ISTP	ISFP	INFP	INTP
Sports	Sports	Friends	Sports
Friends	Swim. Pool	Sports	
		*Play Guitar	

ESTP	ESFP	ENFP	ENTP
Sports	Sports	Sports	Sports
Friends	Friends	Greek Act.	Parties
		Friends	Friends
		*Sewing	
		*Quiet Time	

ESTJ	ESFJ	ENFJ	ENTJ
Sports	Swim. Pool	Sports	Sports
Jog	Greek Act.	Parties	Read
			*Acting

* Unique to this type.

Most Commonly Mentioned: Sports, socialize/talk with friends; sunbathe at pool; attend parties and functions; jog; read.

APPENDIX F
FREQUENTLY* NAMED ACTIVITIES GROUPED BY LEISURE SATISFACTION SUBSCALES

	Psychological	Educational	Social	Relaxational	Physiological	Aesthetic
Low LSS Scores >12	Swimming Pool (2)	Friends (4) Tennis (2) Play Guitar/ Sing (2)	Friends (2) Tennis (2) Drugs/Drink (2)	Drinking (2)	Friends (4) Reading (3) Greek Act. (3)	Friends (4) Greek Act. (3)
High LSS Scores >17	Sports (9) Tennis (6) Swim (5) Reading (5) Music (5) Greek Act. (5)	Sports (10) Friends (8) Tennis (6) Reading (6) Greek Act. (5)	Sports (10) Reading (9) Swimming (6) Friends (7) Tennis (5) Sunning (5)	Sports (15) Friends (11) Reading (9) Sunning (7) Tennis (7) Parties (6) Greek Act. (6) Swimming (6) Sailing (6)	Sports (8) Tennis (5) Friends (5) Parties (3) TV (3) Sailing (3)	Reading (4) Friends (4) Greek Act. (3) Sports (3) Tennis (3)

A number of other activities named 2 or 3 times.

---

* Activities mentioned only once are not included here.
Random sampling of 100 respondents from N=189.

APPENDIX G
ANOVA FEMALES AND MALES, MBTI, LSS

Leisure Satisfaction Subscale	Female F-Ratio	Male F-Ratio
Psychological	1.93	2.09*
Educational	1.43	1.05
Social	1.42	1.46
Relaxational	2.21*	0.98
Physiological	0.92	1.06
Aesthetic	1.68	0.67
Total LSS Score	1.84	1.29

* Significant at .05.

df females = 15/93 df males = 15/74

APPENDIX H
ANOVA MBTI AND GPA

Males F = 0.89 (df = 15/68)

Females F = 1.49 (df = 15/89)

APPENDIX H
CORRELATION MATRIX MBTI CONTINUOUS* SCORES, LSS SUBSCALES, AND GPA

	E-I	S-N	T-F	J-P	Psycho.	Educa.	Social	Relax.	Physio.	Aesthetic
S-N	-0.015									
T-F	0.007	0.092								
J-P	-0.036	0.241**	0.198**							
Psychological	0.038	-0.044	-0.225**	-0.242**						
Educational	-0.121	0.002	-0.150*	-0.266**	0.582**					
Social	-0.237**	0.032	0.093	-0.174*	0.318**	0.420**				
Relaxational	-0.110	-0.005	-0.015	-0.093	0.380**	0.275**	0.457**			
Physiological	-0.243**	-0.096	-0.226**	-0.025	0.377**	0.313**	0.186**	0.333**		
Aesthetic	-0.095	0.093	-0.167*	-0.189**	0.427**	0.494**	0.294**	0.241**	0.374**	
GPA	0.029	0.097	0.005	-0.237**	0.187**	0.117	0.147*	0.079	0.036	0.149*

* Continuous scores are constructed by adding 100 to I, N, F, and P scores and subtracting E, S, T, and J scores from 100.

** Caution should be used interpreting continuous scores. Some MBTI Studies (MBTI Manual, 1962), which plot the regression of dependent variables on the preference scales, do not have linear regressions. Also Continuous Scores assume scores are interval measures, but scores may not actually be of equal intervals.

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BIOGRAPHICAL SKETCH

Judith A. Provost was born in Connecticut and completed undergraduate work at the University of Connecticut with a major in nursing. After working in psychiatric settings, as well as in several other medical specialties, Judy returned to graduate school at the University of California, Los Angeles, receiving a Master's degree with a specialty in psychiatric nursing and completing two additional terms in community mental health. Internships and field studies included a wide variety of settings, age groups, and socio-economic populations in the Los Angeles area. Through these experiences in psychiatric hospitals, comprehensive mental health centers, and outreach programs, Judy has developed a holistic and proactive mental health counseling and consultation framework.

Judy's focus shifted from a clinical/mental health center orientation to an educational setting upon her move to Florida. She became involved in a citizen's task group on education in her county, volunteered, and consulted with the public school system. Judy was one of the first professional counselors hired by Valencia Community College's Center for Continuing Education for

Women. She assisted in developing the Title I grant and women's/community programs as well as doing counseling and outreach.

After two years at Valencia, Judy began work as the personal counselor at Rollins College, Winter Park, where she has counseled, taught, and consulted for six years. Her doctoral work has focused on counseling and college student personnel work with a subspecialty in leisure counseling. In addition she has done extensive training in Gestalt Therapy through the Gestalt Therapy Institute of Florida.

She strives for a "balanced" lifestyle of work and play that involves an active family life (husband and two teenage daughters), a lot of tennis, sailing, writing poetry, sharing with friends, and of course, stimulating professional involvements.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

Larry C Loesch

Larry C. Loesch, Chairman
Professor of Counselor Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

Rod McDavis

Rod McDavis, Associate Professor
of Counselor Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adquate, in scope and quality, as a dissertation for the degree of Doctor of Education.

Mary H. McCaulley

Mary McCaulley
Assistant Professor of Psychology

This dissertation was submitted to the Graduate Faculty of the Department of Counselor Education in the College of Education and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Education.

August, 1982

Dean for Graduate Studies
and Research